

*Robert Longley 5/18/84*

# Las Cruces District WILDERNESS

## SUPPLEMENTAL DRAFT ENVIRONMENTAL ASSESSMENT



U.S. Department of the Interior, Bureau of Land Management  
Las Cruces District, May, 1984

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IN REPLY  
REFER TO:  
8500

# United States Department of the Interior

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DISTRICT OFFICE  
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Dear Interested Party:

This document is a Draft Environmental Assessment (EA) for three Bureau of Land Management (BLM) Wilderness Study Areas (WSAs) in the Las Cruces District. This Draft supplements the four BLM New Mexico District Draft EAs and the New Mexico Wilderness Supplemental Draft Environmental Assessment previously released on March 30, 1983, and August 1, 1983, respectively.

In November 1980, the three areas covered by this EA were identified in the New Mexico Wilderness Study Area Decisions as intensive inventory units lacking the requisite characteristics for a WSA. The three areas were to be released from further wilderness review. However, the decisions in the New Mexico Wilderness Study Area Decisions (November 1980) were appealed to the Interior Board of Land Appeals (IBLA). The IBLA recently completed their review of the appeals and as a result of the IBLA rulings, three new WSAs were designated in the Las Cruces District and subsequently studied for their suitability or unsuitability for wilderness designation.

The recommendations displayed in this Draft EA are those of the Area Managers. We invite your review and comment on this document. Your comments should be sent to the Area Manager responsible for the WSA upon which you are commenting.

Area Managers for the WSAs covered in this document are:

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Area Manager  
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Socorro, New Mexico 87801  
Telephone: (505) 835-0412

Please submit your comments to the appropriate Area Manager by <sup>July 2</sup> June 16, 1984. A comment/response form (located at the back of the document) has been provided for your convenience. Based upon the public comments, the recommendations made by the Area Managers will be reevaluated and subject to my concurrence in the Final EA.

Sincerely yours,

  
Daniel C. B. Rathbun  
District Manager

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## CHAPTER 1 PURPOSE AND NEED

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### INTRODUCTION

This document is a Draft Environmental Assessment (EA) for three Bureau of Land Management (BLM) Wilderness Study Areas (WSAs) in the Las Cruces District. This Draft supplements the four BLM New Mexico District Draft EAs and the New Mexico Wilderness Supplemental Draft Environmental Assessment previously released on March 30, 1983, and August 1, 1983, respectively.

In November 1980, the three areas covered by this EA were identified in the New Mexico Wilderness Study Area Decisions as intensive inventory units lacking the requisite characteristics for a WSA. The three areas were to be released from further wilderness review. However, the decisions in the New Mexico Wilderness Study Area Decisions (November 1980) were appealed to the Interior Board of Land Appeals (IBLA). The IBLA recently completed their review of the appeals and as a result of the IBLA rulings, three new WSAs were designated in the Las Cruces District and subsequently studied for their suitability or unsuitability for wilderness designation.

The New Mexico BLM has modified its administrative boundaries since the four District Draft EAs were released. The modification had several effects, including moving some WSAs to the jurisdiction of a different Resource Area or District and changing Socorro from a District to a Resource Area. (Most of the old Socorro District is now a Resource Area administered by Las Cruces District. The remaining portion is administered by the Albuquerque District.) As a result of this change, only three District Final EAs will be prepared.

### NEED FOR THE PROPOSAL

The Federal Land Policy and Management Act (FLPMA) of 1976 mandated the BLM to examine the wilderness potential of certain areas of public land. The wilderness review provision of the FLPMA, Section 603, directs the BLM to conduct an inventory to identify all roadless areas of 5,000 acres or more that have wilderness characteristics. These areas are called Wilderness Study Areas. Once WSAs have been identified, they are studied through BLM's planning system to determine whether each is suitable for preservation as wilderness or is more suitable for other uses. The findings of these studies lead to recommendations, through the Secretary of the Interior and the President, to Congress. Only Congress has the authority to designate wilderness.

## THE BLM NEW MEXICO WILDERNESS STUDY PLANNING PROCESS

In New Mexico, 37 WSAs are being studied simultaneously as part of a statewide planning process. (See Map 1-1 for WSAs in New Mexico.) In accordance with BLM planning regulations, the Category III plan amendment process is being followed. The process provides for site-specific analysis through preparation of District EAs.

After the EAs are finalized, a Statewide Draft Environmental Impact Statement (EIS) will be prepared which will summarize cumulative impacts and include the recommendations of the BLM New Mexico State Director. These recommendations will be based upon the District and Area Managers' recommendations and any new information, including public comment. The State Director's recommendations will take into account the BLM Wilderness Study Criterion which requires consideration of representation of basic ecosystems in the National Wilderness Preservation System.

After public comment and subsequent revisions, a Final EIS and Wilderness Study Reports will be prepared. Recommendations will be made through the Secretary of the Interior to the President, followed by Congressional action. These EAs, the Statewide EIS, and subsequent decisions in conjunction with Congressional actions will serve to amend current Management Framework Plans (MFPs).

## WILDERNESS STUDY AREAS IN THE LAS CRUCES DISTRICT

The Las Cruces District is divided into three Resource Areas: the Las Cruces/Lordsburg Resource Area (LCLRA), the Socorro Resource Area (SRA), and the White Sands Resource Area (WSRA). As a result of the wilderness inventory process, subsequent policy decisions, and IBLA rulings, 27 WSAs have been identified in these three Resource Areas. The WSAs in the Las Cruces District are listed by Resource Area on Table 1-1. Maps 1-1 and 1-2 show the general locations of the three Resource Areas and the 27 WSAs. The three WSAs addressed in this Draft EA are shown in gray on Map 1-2 and asterisked on Table 1-1.

The WSAs in the Las Cruces District were studied to determine their suitability for wilderness designation. The results of that study are documented in Wilderness Analysis Reports (WARs). Appendices A through C contain the three WARs summarized in this Draft EA. Summaries of the discussions in the WARs are presented in Tables 2-2, 3-1, 3-2, and 4-1 of this Draft EA.



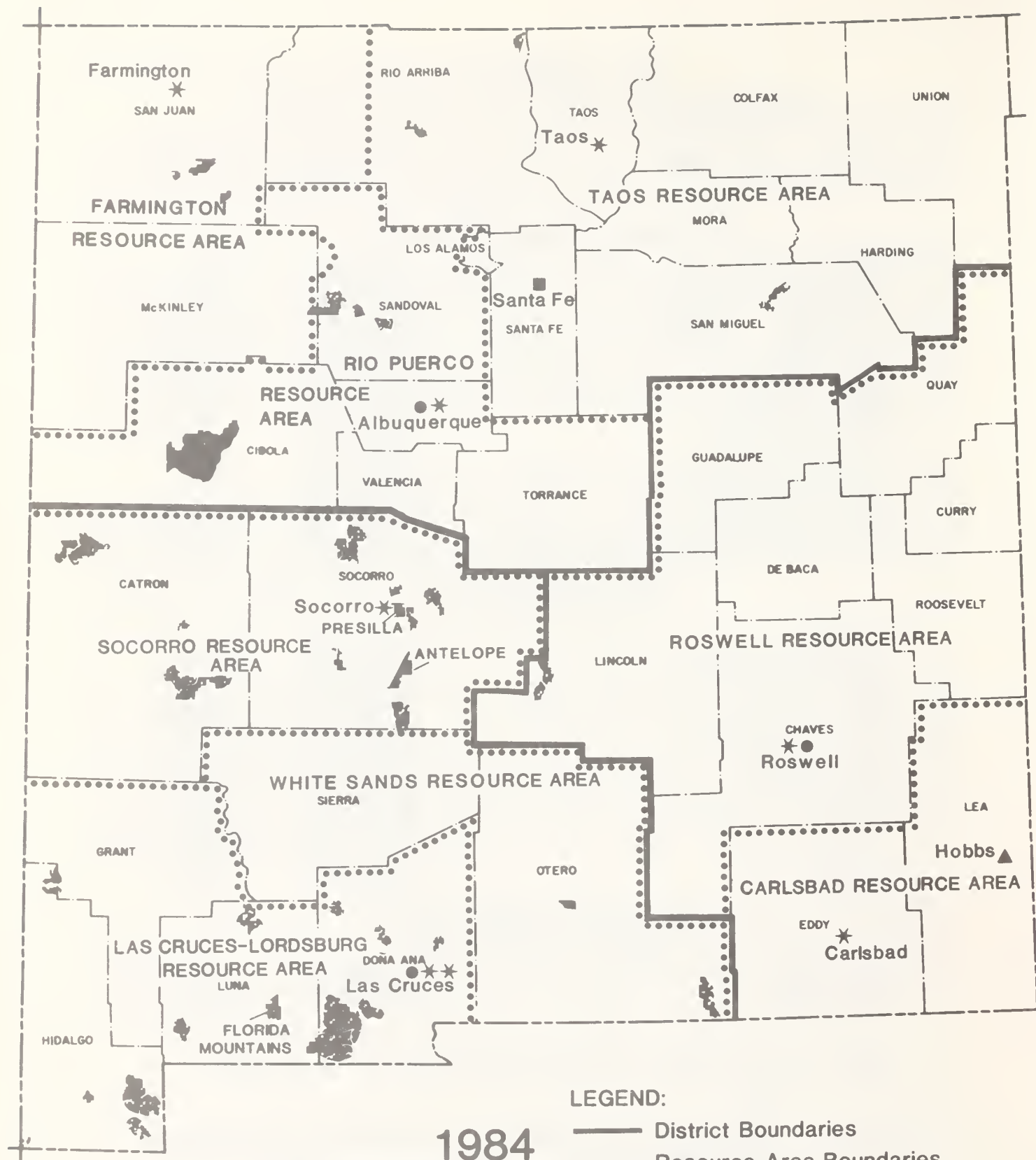
TABLE 1-1  
WILDERNESS STUDY AREAS IN THE LAS CRUCES DISTRICT

Area Name	Area Number	Acreage <sup>a/</sup>
<u>Las Cruces/Lordsburg Resource Area</u>		
Aden Lava Flow	NM-030-053	23,857
Alamo Hueco Mountains	NM-030-038	10,796
Big Hatchet Mountains	NM-030-035	58,014
Blue Creek	NM-030-026	14,096
Cedar Mountains	NM-030-042	14,911
Cooke's Range	NM-030-031	19,608
Cowboy Springs	NM-030-007	6,699
*Florida Mountains	NM-030-034	22,336
Gila Lower Box	NM-030-023	8,555
Las Uvas Mountains	NM-030-065	11,067
Organ Mountains	NM-030-074	7,144
Robledo Mountains	NM-030-063	12,811
West Potrillo Mountains and Mount Riley	NM-030-052	155,105
<u>Socorro Resource Area</u>		
*Antelope	NM-020-053	20,710
Continental Divide	NM-020-044	68,761
Devil's Backbone	NM-020-047	8,904
Eagle Peak	NM-020-019	32,748
Horse Mountain	NM-020-043	5,032
Jornada del Muerto	NM-020-055	31,147
Mesita Blanca	NM-020-018	16,429
*Presilla	NM-020-037	8,680
Sierra de las Canas	NM-020-038	12,838
Sierra Ladrones	NM-020-016	42,688
Stallion	NM-020-040	24,238
Veranito	NM-020-035	7,206
<u>White Sands Resource Area</u>		
Brokeoff Mountains	NM-030-112	30,103
Culp Canyon	NM-030-152	10,937

Source: BLM, Las Cruces District Office Files, 1983 (revised 1984).

Notes: \* These WSAs are addressed in this Draft Environmental Assessment.

<sup>a/</sup>The acreages shown are approximate and reflect corrections made during the wilderness study; therefore, these acreages differ from the acreages published in the New Mexico Wilderness Study Area Decisions (November 1980).



MAP 1-2

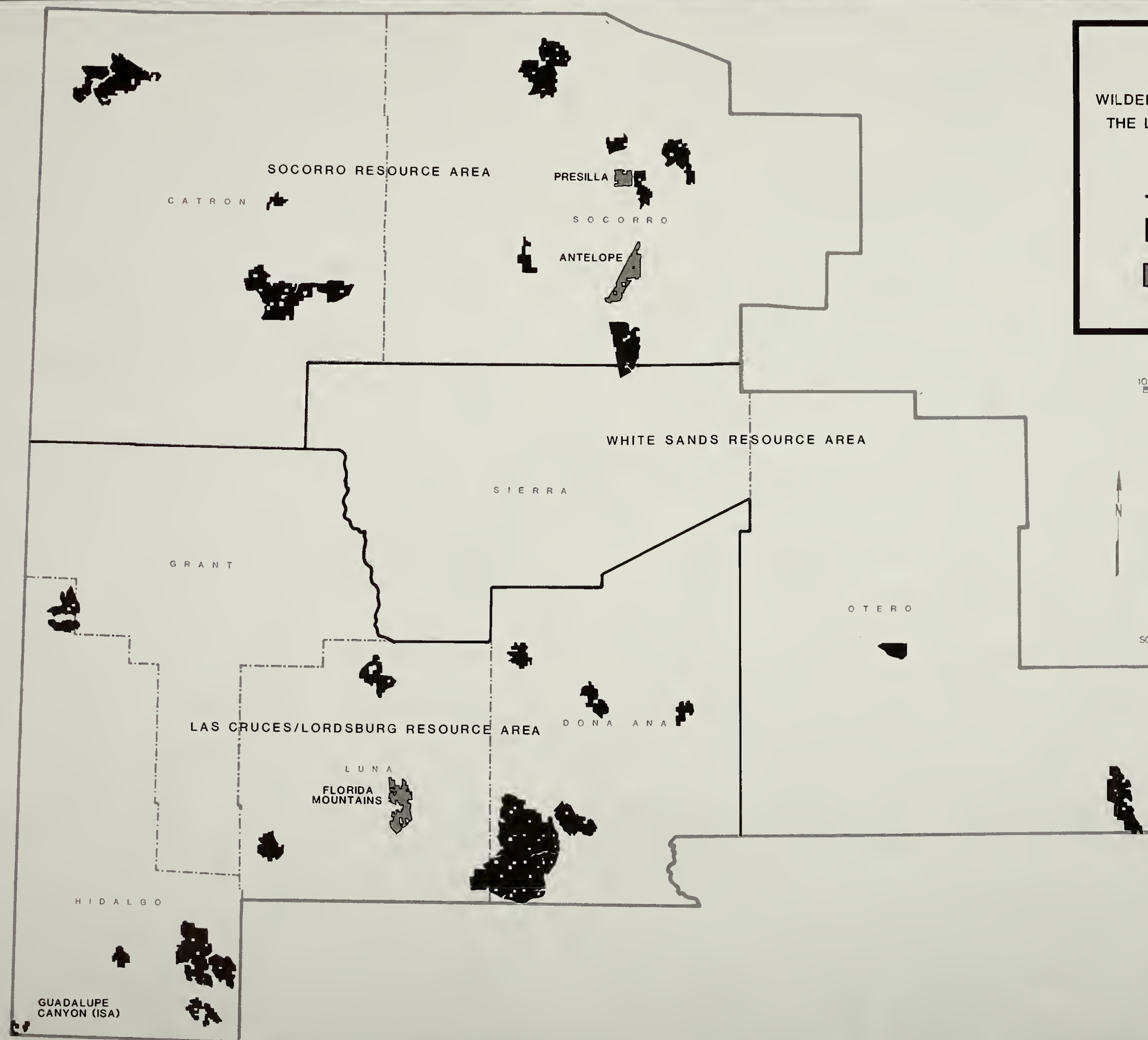
WILDERNESS STUDY AREAS IN  
THE LAS CRUCES DISTRICT

- RESOURCE AREA  
BOUNDARIES
- WILDERNESS STUDY  
AREAS (WSA)
- WSAs DISCUSSED IN  
THIS DOCUMENT

10 0 10 20 30 40  
Scale in miles



SOURCE BLM Las Cruces District Files, 1984





## CHAPTER 2 ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

### ALTERNATIVES

For each Wilderness Study Area (WSA), an All Wilderness Alternative and No Action/No Wilderness Alternative are evaluated. The All Wilderness Alternative analyzes the environmental consequences resulting from wilderness designation of the entire WSA. The No Action/No Wilderness Alternative represents management in accordance with the current BLM land use plans that would be in effect without wilderness designation. Management of the Florida Mountains WSA in the Las Cruces/Lordsburg Resource Area would be in accordance with the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983). Management of the Presilla and Antelope WSAs in the Socorro Resource Area would be in accordance with the East Socorro Grazing Environmental Impact Statement (EIS) (BLM 1979) and the Stallion Management Framework Plan (MFP) (BLM 1975). The alternatives analyzed for each WSA are displayed in Table 2-1.

TABLE 2-1  
SUMMARY OF ALTERNATIVES

WSA/Acres	Preferred Alternative	All Wilderness	No Action/ No Wilderness
Florida Mountains NM-030-034A 22,336 acres	Recommend 22,336 acres unsuitable for wilderness designation.	Recommend 22,336 acres suitable for wilderness designation.	Same as the Preferred Alternative.
Antelope NM-020-053 20,710 acres	Recommend 20,710 acres unsuitable for wilderness designation.	Recommend 20,710 acres suitable for wilderness designation.	Same as the Preferred Alternative.
Presilla NM-020-037 8,680 acres	Recommend 8,680 acres unsuitable for wilderness designation.	Recommend 8,680 acres suitable for wilderness designation.	Same as the Preferred Alternative.

Source: BLM, Las Cruces District Wilderness Analysis Reports, 1984.

Note: a/See appendices for more detailed discussions of alternatives for each WSA.



## PREFERRED ALTERNATIVES

The Preferred Alternative for each WSA is indicated on Table 2-1. The Preferred Alternative represents the recommendations made by the respective Resource Area Managers. Detailed discussions of these WSAs are included in the Wilderness Analysis Reports which appear in Appendices A through C.

## ALTERNATIVES CONSIDERED BUT NOT ANALYZED

During preparation of the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983), the Florida Mountain range was identified as a potential Area of Critical Environmental Concern (ACEC) for visual resources. The mountain range meets the minimum required criteria for a potential ACEC because it rates high in scenic quality and relative scarcity. However, the total scenic resource (the mountain range) contains a significant amount of acreage in non-Federal ownership. Since the land status patterns of the Florida Mountain range would significantly limit BLM's ability to protectively manage the total scenic resource, the area was eliminated from further consideration in the Las Cruces/Lordsburg MFP Amendment/EIS (BLM 1983) as an ACEC for visual resources.

Management of the Florida Mountains as an ACEC for visual resources could have been analyzed in the Wilderness Analysis Report (WAR) under the No Wilderness/Amend the Existing Land Use Plan Alternative. However, since the land status situation has not changed, this alternative was not given further consideration in the preparation of the Florida Mountains WAR.

A No Wilderness/Amend the Existing Land Use Plan Alternative was considered for the Presilla WSA. Special management of the WSA's cultural, recreation, and visual resources would have been the objective of this alternative. However, the existing ACEC and off-road vehicle designations provide adequate management protection for cultural and recreation resources. Special management of the visual resources of the WSA would not adequately address the larger issues of visual resource management along the entire Rio Grande Valley. For these reasons, a special management alternative was not analyzed for the Presilla WSA. The scheduled Stallion-Ladrone MFP update will address visual resource management concerns.

## CHAPTER 3 AFFECTED ENVIRONMENT

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### OVERVIEW OF THE RESOURCE AREAS

The three WSAs in this document are located in the Las Cruces/Lordsburg and Socorro Resource Areas.

#### Las Cruces/Lordsburg Resource Area

The Las Cruces/Lordsburg Resource Area contains one of the three WSAs covered in this document: the Florida Mountains. The Las Cruces/Lordsburg Resource Area includes Dona Ana, Luna, Grant, and Hidalgo Counties. The Florida Mountains WSA is located in Luna County.

#### Major Land Uses

Public land uses include livestock grazing, wildlife use, mining, and various desert recreation uses. Grazing is the predominant land use throughout the Resource Area. Significant mining activities occur in Grant and Hidalgo Counties. Minerals produced include gold, silver, copper, lead, zinc, building stone, and sand and gravel. There is no present production of petroleum, natural gas, uranium, or coal in the Resource Area.

Several areas in the Resource Area have high potential for geothermal energy. The greatest potential is associated with the Rio Grande Rift in Dona Ana County. The potential for direct use applications in the Las Cruces area is high. Several local industries are planning to develop geothermal resources for space and domestic water heating. New Mexico State University in the City of Las Cruces is currently utilizing geothermal energy for direct use applications. In Hidalgo County, two commercial greenhouses are being heated with hot water in the Animas Valley, southwest of the City of Lordsburg.

Outdoor recreation in the Resource Area consists of a wide range of sports and leisure-time activities. Outdoor recreation activities include sightseeing, picnicking, camping, backpacking, hiking, four-wheeling, trail-biking, bird-watching, rockclimbing, rockhounding, sport shooting, horseback riding, and hunting.

#### Social and Economic Conditions

Major trade and service centers for the 4-County area are the cities of Las Cruces, Silver City, Deming, and Lordsburg, New Mexico and El Paso, Texas.

Although population characteristics vary by county, all show growth between 1970 and 1980 (see Table 3-1). Annual growth rates over this period varied from 3.81 percent for Dona Ana County to 1.89 percent for Grant County. The population densities per square mile shown on Table 3-1 indicate that Luna, Hidalgo, and Grant Counties are generally rural. The major concentrations of people in the Resource Area are in Dona Ana County.

TABLE 3-1  
POPULATION CHARACTERISTICS

County	Population		Percent Change 1970-1980
	Number	Per Square Mile	
<u>Las Cruces/Lordsburg Resource Area</u>			
Dona Ana	96,340	25.2	38.1%
Grant	26,204	6.6	18.9%
Hidalgo	6,049	1.8	27.8%
Luna	15,585	5.3	33.1%
<u>Socorro Resource Area</u>			
Catron	2,720	0.4	23.7%
Socorro	12,566	1.9	28.7%
<hr/> <hr/>			
STATE OF NEW MEXICO	1,302,894	10.7	28.1%

Source: U.S. Department of Commerce, Bureau of the Census, 1982.

There are five Standard Metropolitan Statistical Areas (SMSAs) with populations of 90,000 or more within an 8-hour drive (400 miles) of the WSA. These SMSAs have a combined 1980 population of over 2.8 million people.

Residents in the counties that are sparsely populated (Hidalgo, Luna, and Grant) exhibit attitudes and values typical of rural, ranch-oriented societies in the western United States. The rural character of the area is what some residents value most about their lifestyle. Specifically, they appreciate the western way of life, which includes among its components the following: small-town living with its customs of friendliness, neighborliness, and mutual aid; a love of the great outdoors; and adherence to traditional, conservative values (Mountain West Research 1975).

Although Dona Ana County also contains vast rural areas where residents tend to have the same rural attitudes and values as in the sparsely populated counties (Harbridge House, Inc. 1978), increased population pressures, the influence of the larger city, and tourism add a new element to the traditional rural perspective. Generally, residents of Dona Ana County (primarily in the City of Las Cruces) have migrated from other communities for education and employment opportunities, bringing with them their different values.

Although the Las Cruces/Lordsburg Resource Area is rich in culture and natural resources, the area is considered economically poor. Low per capita income, and housing, medical care, legal, and other human services, have been shown to be substandard. Agriculture, ranching, mining, and government have traditionally been the primary activities, with tourism becoming a recent addition.

The total per capita personal income in 1980 for each of the three counties containing WSAs was below the \$7,878 per capita income for the State of New Mexico. In ranking the 32 counties in the State of New Mexico by total per capita personal income in 1980, Dona Ana County ranked 22 (6,328), Luna County ranked 19 (\$6,985), and Hidalgo County ranked 11 (\$7,848) (U.S. Department of Commerce 1982).

### Socorro Resource Area

The Socorro Resource Area is located in west-central New Mexico and contains two of the three WSAs covered in this document: Antelope and Presilla. The Socorro Resource Area includes Socorro and Catron Counties.

### Major Land Uses

Public land in the Socorro Resource Area is utilized for livestock grazing, mining, fuelwood products, scientific research, and various types of recreation.

Grazing is the predominant land use. Although significant mining activity for silver, copper, lead, zinc, iron, uranium, barite, and fluorite occurred in Socorro County in the past, current activities are generally limited to exploration. There is no present production of petroleum, natural gas, or coal in the Resource Area. It is anticipated, however, that coal leasing and development will occur in the western portion of the Resource Area in the closing decade of this century.

Scientific activities on public land in the Resource Area include research at archaeological sites and at the National Radio Observatory's Very Large Array, the world's largest radio telescope.

Outdoor recreation in the Resource Area includes a wide range of sports and leisure-time activities. General outdoor recreation includes sightseeing, picnicking, camping, backpacking, hiking, horseback riding, sport shooting, four-wheeling, and birdwatching, as well as more specialized activities such as caving, rock climbing, rock hounding, and bird and big game hunting.

### Social and Economic Conditions

This portion of west-central New Mexico is typically rural in nature and generally characterized by sparse population, low incomes, high unemployment, and a multicultural orientation influenced by a Spanish heritage.

The Cities of Socorro, Belen, Los Lunas, Grants, and Albuquerque are the major trade and service centers for the region.



The Resource Area is predominantly rural with the community of Socorro representing the only area which may be characterized as urban. Population characteristics vary by county, but both Catron and Socorro Counties show growth over the decade 1970 to 1980 (see Table 3-1). Both counties had annual growth rates of less than 3 percent over this period. Population densities per square mile verify the rural character of the two counties. These figures are shown on Table 3-1.

Most people living in the sparsely populated Resource Area are generally ranch oriented. The rural character of the area, with its open spaces, fresh air, and solitude, is highly valued, as are the personal freedom and independence it affords. The residents also value the lifestyle offered by the local communities, which is characterized by extensive acquaintances, a lack of urban problems, and a relaxed pace. Additionally, most residents feel the area is a good place to raise children, and they wish to maintain the status quo.

The City of Socorro (population approximately 7,173) is the focus of much of the social and economic activity of the Resource Area. The attitudes and perceptions of the residents of Socorro are, in many ways, similar to those of the surrounding rural areas. There is, however, a wide range of attitudes in the community due in large part to the faculty and 1,300 students of the New Mexico Institute of Mining and Technology. The presence of this highly regarded college and the research community associated with the Very Large Array, Langmuir Laboratory, and other research facilities combine with the multicultural character of Socorro to produce a highly diverse community. Much of the support for wilderness designation and environmental issues in general comes from the academic and research community.

Mineral exploration for scientific and development purposes is also highly valued by much of the academic community and by numerous mining claimants in the Socorro area.

Ranching, mining, government services, and tourism form the basis of the economy in the Resource Area. The area is considered economically poor.

The total per capita personal income in 1980 for the two counties in the Socorro Resource Area was below the \$7,878 per capita income for the State of New Mexico. In ranking the 32 counties in the State of New Mexico by total per capita personal income in 1980, Catron County ranked 29 (\$5,171) and Socorro County ranked 28 (\$5,366) (U.S. Department of Commerce 1982). This indicates that these counties are two of the State's lowest in per capita personal income. They are also low compared to other states in the Southwest region (except Utah) and in the United States.

#### WILDERNESS STUDY AREAS

Tables 3-2 and 3-3 summarize the affected environment and the existing and potential uses of each WSA.



TABLE 3-2  
SUMMARY OF AFFECTED ENVIRONMENT<sup>a/</sup>

WSA/Land Status	Topography	Geology	Vegetation and Range Sites	Wildlife	Cultural	Wilderness Values
FLORIDA MOUNTAINS						
(1) Entire WSA -22,336 acres of public land -80 acres of State in- holdings -30 acres of private inholdings (patented mining claim)	North-south trending mountain range with steep canyons and near vertical cliffs. Florida, South, and Gym Peaks have elevations over 7,000 feet.	From Paleozoic through Mississip- pian time, area part of a stable shelf environment. In Pennsylvanian, Pedregosa Basin formed to the west and Floridas area remained topo- graphic high. North-south block faulting during the Tertiary period created the present uplifted mountain range along boundary faults.	12,907 acres of grass- mixed desert shrub hills; 3,413 acres of snakeweed- mixed desert shrub-grass gravelly loam; 4,411 acres of creosote-grass gravelly; 1,289 acres of snakeweed-mesquite-yucca- other shrubs and trees sandy; and 316 acres of other shrubs and trees- mixed desert shrub gravelly sand. Potential habitat for one Bureau sensitive plant species and four State of New Mexico plants of special concern.	Special habitat features are springs, seeps, and cliffs. Prairie falcons, golden eagles, red-tailed hawks, great horned owls, and nesting birds typical of mixed shrub moun- tain communities. Mule deer, small javelina popula- tion, and large herd of introduced Persian ibex.	Two prehistoric sites (bedrock mortars and unusually large campsite).	Quality of naturalness in parts of WSA dimin- ished by the cumulative impacts of rangeland developments and mining activity. Quality of outstanding solitude along east side of range diminished by cherry-stemmed roads, rangeland developments, and past mining activ- ity. Solitude in southwest part and west central parts of WSA not outstanding due to lack of screening. Diversity of primitive recreation opportuni- ties. Non-Federal lands slightly impact recreation opportunities.

TABLE 3-2 (continued)  
SUMMARY OF AFFECTED ENVIRONMENTAL

WSA/Land Status	Topography	Geology	Vegetation and Range Sites	Wildlife	Cultural	Wilderness Values
<b>ANTELOPE</b>						
(1) Entire WSA -20,710 acres of public land -680 acres of State in- holdings	Rolling desert prairie. Eleva- tions range from 4,767 feet to 5,065 feet. Includes small portion of Little San Pasqual Moun- tain foothills.	Predominantly Tertiary valley- fill Santa Fe formation sediments in north part of WSA and Quaternary alluvium and bolson deposits in south part of WSA. With- in Rio Grande Rift.	10,312 acres of broom dalea deep sand and sandy; 5,022 acres of sand sagebrush sandy; 1,637 acres of creosote gravelly, loamy, and limestone hills; 1,631 acres of mesquite sandy and loamy; 993 acres of mid grass loamy; 836 acres of yucca sandy; and 279 acres of short grass sandy. Potential habitat for one State of New Mexico threatened, Federal candidate plant species and three State of New Mexico plants of special concern.	Two Standard Habi- tat Sites support 155 wildlife species including 35 mammal species, 50 reptile and amphibian species, and 70 resident and migratory bird species.	Five recorded sites include lithic and ceramic scatters with hearths. Known unrecorded sites include Paleo-Indian site and Archaic sites.	Quality of naturalness diminished by rangeland developments and access routes within and adja- cent to WSA. Expansive desert environment and low visitor use compen- sate for lack of screening. Quality reduced by configura- tion and traffic along boundary roads. Opportunities for primitive recreation not outstanding.
<b>PRESILLA</b>						
(1) Entire WSA -8,680 acres of public land	Mesa benchlands and arroyos in west part of WSA. Limestone and sandstone hills in east. Also, areas with low granitic ridges, coppice dunes, and box canyons.	Located in the Socorro trough (a faulted, tectonic depression) and Rio Grande Rift. Late Tertiary valley- fill sediments of Santa Fe formation and Quaternary alluvium in west part of WSA and outcrops of Penn- sylvanian age Madera limestone on exposures of Pre- Cambrian granite in east part of WSA.	7,403 acres of creosote gravelly, limestone hills, and igneous hills; 1,261 acres of desert shrub sandy; and 16 acres of pinyon-juniper lime- stone hills. Potential habitat for two State of New Mexico plants of special concern.	Two Standard Habi- tat Sites support 213 wildlife species including 27 mammal species, 41 reptile and amphibian species, and 145 resident and migratory bird species.  Common wildlife species are coy- otes, blacktailed jackrabbits, desert cottontails, mule deer, and various raptors and songbirds.	Seven known sites including small struc- tures of un- known function and date, an archaic lithic scatter, a quarry, and a unique Piro pictograph site.	Quality of naturalness impacted by vehicle routes and mining activity. Good oppor- tunities for solitude. Variety of landforms and cultural features provide opportunities for primitive recreation.

Source: BLM Las Cruces District Wilderness Analysis Reports, 1984.

Note: a/The appendices contain more detailed information on each WSA.

TABLE 3-3  
EXISTING AND POTENTIAL USES<sup>a/</sup>

WSA	Minerals	Livestock Grazing	Recreation	Wildlife	Other
FLORIDA MOUNTAINS					
(1) Entire WSA	Low oil and gas potential. High potential for base metals, and precious metals, and manganese. Underground hardrock exploration occurring in T. 26 S., R. 8 W., Section 1, SE 1/4.	WSA includes parts of six grazing allotments. A pipeline off an existing windmill is proposed.	Opportunities for hiking, climbing, rock-hounding, nature study, and hunting. Three limited permit ibex hunts annually. Off-road vehicle use on boundary roads and trails. Spring Canyon State Park adjacent to north boundary.	Area covered by Habitat Management Plan. Primary objective is Persian ibex management. Two quail guzzlers and umbrella catchments in WSA.	Education/Research Fast studies conducted on Persian ibex, plant surveys, and geology (thrust faults and tectonic significance). Realty Mineral material pit right-of-way (ROW) and electric transmission line ROW form WSA boundaries. Barite of America Mine access road has 10-year ROW.
(2) Portion Recommended Suitable N/A					
ANTELOPE					
(1) Entire WSA	Low oil and gas, coal, and geothermal potential. Low potential for locatables.	WSA includes parts of two grazing allotments.	Dove and quail hunting. Vehicular sightseeing along east side of WSA. Existing use is low.	One umbrella catchment in WSA.	WSA is within the White Sands Missile Range Aerobee 350 Safety Evacuation Zone.
(2) Portion Recommended Suitable N/A					
PRESILLA					
(1) Entire WSA	Low oil and gas potential. Moderate geothermal and uranium potential. Low to moderate potential for fluorspar, barite, lead, and zinc. Low potential for copper.	All of one and portions of four grazing allotments are within the WSA.	Activities include hunting, archaeological sightseeing, off-road vehicle use, rock collecting, hiking, camping, and rock climbing.	N/A	Education Research New Mexico Institute of Mining and Technology has conducted geologic studies in the area. Cultural Designated Tinajas Natural Area of Critical Environmental Concern (1,280 acres) to protect pictographs.
(2) Portion Recommended Suitable N/A					

Source: BLM Las Cruces District Wilderness Analysis Reports, 1984.

Note: <sup>a/</sup>The appendices contain more detailed information on each WSA.



## CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

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### SUMMARY OF IMPACTS

Table 4-1 includes a summary of the environmental consequences. Further discussion of environmental consequences are contained in the Wilderness Analysis Reports (WARs). (See Appendices A through C of this document.) If any of these areas are designated as wilderness, wilderness management plans will be prepared. These plans will provide the opportunity to incorporate measures designed to mitigate adverse environmental impacts.

### SOCIAL AND ECONOMIC IMPACTS

In addition to the impacts summarized in Table 4-1, there would be overall social and economic impacts which would apply to all areas discussed.

Wilderness designation would not have a significant impact on the population, income, and employment for the counties that contain WSAs: Socorro and Luna Counties.

#### Local Attitudes and Perceptions

Wilderness designation would not change the general attitudes or values of local residents, but could affect specific attitudes toward the BLM, the Federal Government, and how some ranchers view the future of their operations.

Wilderness designation could affect impacted ranchers' expectations of being able to remain in the ranching business. Some ranch operators think that as a result of changing administrations, drastic changes in livestock numbers or policy modifications that prevent rangeland developments could be forthcoming in areas designated wilderness. Ranchers are also concerned about the changes in ranch loan and sale values that could occur as a result of wilderness designation. If designation occurs, many ranchers feel their operation would be less viable than it was before designation.

#### Economic Conditions

Designation of an area as wilderness could affect the manageability of some livestock operations. For example, the livestock operator could incur minor inconveniences due to vehicular restrictions within the designated wilderness.



TABLE 4-1  
SUMMARY OF ENVIRONMENTAL CONSEQUENCES/

Alternatives by WSA/Acreage	Minerals	Water, Soils, Vegetation	Wildlife	Visual	Cultural	Livestock Grazing	Recreation	Wilderness Values
FLORIDA MOUNTAINS								
All Wilderness [22,336 acres]	Because of low potential, impacts to energy minerals not significant.  <u>Potentially significant impacts on locatable minerals.</u>	Restrictions on surface disturbing activities would provide long-term protection and maintain condition of existing resource.	Management under Habitat Management Plan would continue. Existing habitat would be maintained.	Quality of existing resources would be maintained.	Impacts not significant.	No impact on current levels of authorized grazing use. Minor inconveniences to operators due to securing permits for motorized access to maintain one windmill and two improved springs. No motorized access on 7 miles of vehicle trails.	Impacts on nonprimitive types of recreation not significant.	<u>Wilderness values would have significant long-term Congressional protection.</u>  <u>Due to high mineral potential, existing mining claims, land status, and boundary configuration, the area could not be managed as wilderness.</u>  <u>Exploration and development of valid mining Claims could significantly degrade wilderness values.</u>
No Action/No Wilderness [22,336 acres]	No impacts	If mineral development occurs, some loss of vegetation and topsoil could result. Loss of vegetation and soil disturbance on less than one acre if pipeline on Koenig allotment (2033) is installed.	Wildlife and habitat disturbed if mineral development occurs.	Quality of visual resources maintained on 18,336 acres. Moderate changes allowed in quality of visual resources on 4,000 acres.	Impacts not significant.	No impacts.	Impacts on nonprimitive types of recreation not significant.	<u>Wilderness values would not have long-term Congressional protection.</u> <u>Exploration and development of mining claims could significantly degrade wilderness values.</u>

TABLE 4-1 (continued)  
SUMMARY OF ENVIRONMENTAL CONSEQUENCES<sup>a/</sup>

Alternatives by WSA/Acreage	Minerals	Water, Soils, Vegetation	Wildlife	Visual	Cultural	Livestock Grazing	Recreation	Wilderness Values
<b>ANTELOPE</b>								
All Wilderness [20,710 acres]	Impacts not significant due to low potential for mineral resources.	Existing resources would be maintained.	Existing habitat would be maintained.	Quality of existing resources would be maintained.	Impacts not significant.	No impact on current levels of authorized use.	Deny vehicular access on 7 1/2 miles of vehicle routes.	Wilderness values would have significant long-term Congressional protection.
No Action/No Wilderness [20,710]	No impacts.	Impacts not significant.	No impacts.	Impacts not significant.	No impacts.	No impacts.	No impacts.	Wilderness values would not be provided with long-term Congressional protection.
<b>PRESILLA</b>								
All Wilderness [8,680 acres]	Due to low potential, impacts to oil and gas are not significant. Impacts to geothermal resources are not significant because of higher potential areas closer to Socorro.	Slight increase in vegetative cover as a result of mining access route rehabilitation. Restrictions on surface disturbing activities would provide long-term protection and maintain condition of existing resources.	Existing habitat would be maintained.	Slight improvement in quality of visual resources as a result of access route rehabilitation. Quality of existing resources would be maintained.	Interpretive facilities for Tinajas Area of Critical Environmental Concern would be relocated.	No impact on current levels of authorized grazing use.	Impacts on vehicle dependent recreation not significant because of availability of opportunities elsewhere.	Wilderness values would have significant long-term Congressional protection.
No Action/No Wilderness [8,680 acres]	Impacts not significant.	Impacts not significant.	Impacts not significant.	Surface disturbance could impact visual quality.	Impacts not significant.	No impacts.	Impacts not significant. Existing use patterns would continue.	Wilderness values could be significantly impacted.

Source: BLM Las Cruces District Wilderness Analysis Reports, 1984.

Note: a/Significant impacts are underlined.

Most ranch operators may need to borrow operating capital. In practice, a BLM grazing permit has value for borrowing money and adding value to the base property at the time of sale. The market value of an animal unit month (AUM) as of September 21, 1982, was approximately \$100 (Ratliff 1982). Normally, when a loan is made, the Federal Land Bank will loan approximately 65-70 percent of the market value per AUM. Those portions of the grazing allotments within the boundary of a designated wilderness would have a loan value of approximately 50-60 percent of the AUM market value (Ratliff 1982). Operators who may require additional operating capital for their operation would experience an unfavorable economic effect if a portion of their grazing allotment is within a designated wilderness area, since the loan value would be 10-15 percent less for those AUMs within the wilderness area than it is for AUMs outside the wilderness area.

Wilderness designation may enhance the preservation value of wilderness. The preservation value of wilderness includes option, existence, and bequest values to the general public. The option value is defined as the willingness to pay for the opportunity to have access to wilderness areas for recreation use in the future. The existence value is defined as the amount of money people are willing to pay for the knowledge that natural habitat for plants, fish, and wildlife are protected in wilderness areas. The bequest value is defined as the willingness to pay for the satisfaction derived from endowing future generations with wilderness resources (Walsh et al. 1981). Quantification of these values is beyond the scope of this document.

## CHAPTER 5

### CONSULTATION AND COORDINATION

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#### PURPOSE OF SCOPING

The Council on Environmental Quality (CEQ) Regulations implementing the procedural provisions of the National Environmental Policy Act (NEPA) provide for an early and open process to determine the scope of issues to be addressed and to identify the significant issues related to the proposed alternatives. This process is termed "scoping" (43 Code of Federal Regulations 1501.7). In addition, scoping requires the lead agency to inform and involve affected Federal, state, and local agencies, Indian tribes, and other interested persons. The process is designed to identify and emphasize the significant issues and eliminate those that are either not significant or have been covered by earlier environmental review.

#### SCOPING ACTIVITIES

To identify significant issues related to the wilderness study of WSAs in the Resource Areas, various Federal, state, and local agencies, interest groups, and individuals were contacted through correspondence, by telephone, and in informal meetings. These meetings were also used to explain the results and effects of the Interior Board of Land Appeals (IBLA) rulings, to solicit resource information from the various publics for inclusion in the Wilderness Analysis Reports (WARs), and to explain the wilderness study procedures.

The Resource Areas also reviewed and evaluated the IBLA decisions and public comments received during the inventory phase (January 1979 - November 1980) of the wilderness review, and Resource Area specialists applied their professional judgment in analyzing issues.

Other consultation and coordination activities included field trips to specific WSAs with interested individuals, small groups, and meetings with affected permittees.

In addition, an extensive mailing list has been assembled throughout the wilderness inventory and study process to ensure that all Federal, state, and local agencies, interest groups, and individuals are kept informed of the progress of the wilderness review.

#### SCOPING RESULTS

The scoping process identified the following issues of concern for each of the WSAs.

## Florida Mountains WSA

Mineral potential and the quality of the WSA's wilderness values were the primary issues identified for the Florida Mountains WSA. Base and precious metals have been mined intermittently in the Florida Mountains since about 1880. Minerals recovered include gold, silver, lead, zinc, copper, and manganese. Concern exists over possible restrictions to mining which could result from wilderness designation.

The second issue is the quality of the WSA's wilderness values. Those favoring wilderness designation for the WSA state the area has high quality wilderness and supplemental values. Those opposed to wilderness designation felt the area's wilderness values have been degraded by past mining activity and cherry-stemmed vehicular routes.

## Antelope WSA

The primary issue identified for the Antelope WSA was the quality of the area's wilderness values. Those opposed to wilderness designation felt the area's unvaried topography and lack of recreation resources did not meet the criteria for a wilderness area. Supporters of wilderness designation cite the WSA's proximity and similarity to the Little San Pasqual Wilderness as evidence of the area's wilderness characteristics.

## Presilla WSA

The primary issues identified for this WSA were the quality of the area's wilderness values and the area's special features. Mining activity and post-Federal Land Policy and Management Act road construction have affected the area's naturalness and the BLM's ability to manage the area as wilderness. Under nonwilderness management, concerns exist over management of the area's cultural and recreational resources.

## LIST OF PREPARERS

A list of persons involved in the preparation of the WARs and Environmental Assessment is provided Table 5-1.



TABLE 5-1  
LIST OF PREPARERS

Name	WAR/EA Responsibility	Education	Experience
<u>CORE TEAM</u>			
Jeff Jarvis	Team Leader	B.S., Natural Resources Ohio State University	BLM 5 yrs. - Outdoor Recreation Planner District Outdoor Recreation Planner NPS 2 yrs. - Park Ranger FWS 9 mos. - Work Coordinator (Youth Program)
Donita Cotter	Technical Coordinator	B.S., Environmental Science Texas Christian University	BLM 5 yrs. - Wilderness Specialist Surface Protection Specialist
Rena Gutierrez	Writer-Editor	B.A., Journalism/Mass Communication New Mexico State University	BLM 6 yrs. - Public Information Aid Clerk-Typist Writer-Editor
Kimberly A. Harrison	Editorial Assistant	2 Semesters - Biology Texas Lutheran College 1 Semester - Art University of Texas at El Paso	BLM 5 yrs. - Clerk-Typist Planning Clerk (Typing) Editorial Assistant (Typing) El Paso Community College 4 yrs. - Registration Cashier Night Cashier/PBX Operator Accounts Payable File Clerk Secretary II
Gilbert Valencia	Cartographic Technician		BLM 6 yrs. - Cartographic Technician
<u>LAS CRUCES/LORDSBURG RESOURCE AREA</u>			
Bruce G. Call	Soils	B.S., Agriculture (Range and Soil Science) New Mexico State University	BLM 5 yrs. - Range Technician Range Conservationist Soil Scientist USFS 7 mos.- Forestry Technician Soil Technician
Steven C. Hamp	Topography, Climate, Water	B.S., Geology and Sociology Illinois State University M.S., Watershed Management University of Arizona	BLM 5 yrs. - Hydrologist USFS 2 yrs.- Forest Technician
Pete M. Laudeman	Cultural Resources	B.A., M.A., Anthropology University of Arizona	BLM 8 yrs. - Archaeologist
Linda K. Seibert	Wildlife	B.S., Wildlife Science New Mexico State University B.A., Spanish (minor - Russian) San Jose State University	BLM 8 yrs. - Wildlife Biologist NMSU 4 yrs.- Library Assistant Santa Clara County 2 yrs. - Welfare Eligibility Worker
Beatrice A. Wade	Vegetation, Livestock Grazing	B.S., Forestry (minor - Wildlife Management) 10 quarters - Range Ecosystem Management 2 yrs. - Master's Thesis Work University of Florida	BLM 6 yrs. - Range Conservationist University of Florida 5 yrs. - Range Biologist (Research)

TABLE 5-1 (concluded)

Name	WAR/EA Responsibility	Education	Experience
<u>SOCORRO RESOURCE AREA</u>			
Wayne Albrecht	Livestock Grazing	B.S., Range Management B.S., Wildlife Management Texas A&M University	BLM 17 yrs. - Range Conservationist Planning and Environmental Coordinator
Wesley Anderson	Wildlife	B.S., Wildlife Management New Mexico State University	BLM 3 yrs. - Wildlife Management Biologist
Bernadine Creager	Land Status, Access, Realty Actions	Business College	BLM 4 yrs. - Realty Specialist Private Industry 20 yrs. - Secretary and Bookkeeper
Tom C. Custer	Geology, Minerals	B.S., Geology New Mexico State University	BLM 9 yrs. - Geologist USGS 1 yr. - Physical Science Technician
Pete M. Laudeman	Cultural Resources	B.A., M.A., Anthropology University of Arizona	BLM 8 yrs. - Archaeologist
Larry Livingston	Livestock Grazing	B.S., Range Management Arizona State University	BLM 5 yrs. - Range Conservationist SCS 1 yr. - Range Conservationist
Carol Marchio	Water, Soils, Air, Watershed	B.S., Resource Management M.S., Land Use Planning University of Wisconsin	BLM 6 yrs. - Soil Scientist
Robert Marchio	Livestock Grazing	B.S., Forest and Resource Management University of California at Berkeley	BLM 8 yrs. - Range Conservationist USFS 6 mos. - Realty Assistant
Laird McIntosh	Location, Climate, Topography, Vegetation	B.S., Biology B.S., Botany Fort Hays Kansas State University	BLM 4 yrs. - Botanist Range Conservationist USFS 1 yr. - Range Conservationist
Bob Prickett	Lead Responsibility Visual, Recreation, Wilderness Values	B.A., Asian Studies M.A., Recreation Management University of Oklahoma	BLM 4 yrs. - Outdoor Recreation Planner/ Wilderness Coordinator BIA 3 yrs. - Recreation Specialist U.S. Army 2 yrs. - Intelligence Analyst

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 Bruce Call, District Soil Scientist  
 Tom C. Custer, District Geologist  
 Steven C. Hamp, District Hydrologist  
 Kenneth E. Holmes, District Wildlife Specialist  
 Pete M. Laudeman, District Archaeologist  
 Juan Padilla, District Realty Specialist  
 William Tipton, Resource Area Geologist  
 Joseph I. Torrez, Resource Area, Chief, Lands and Minerals  
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 Joe Sovcik, New Mexico State Office Environmental Coordinator  
 Ralph Leon, New Mexico State Office Cartographer

# APPENDICES



## APPENDIX A

### FLORIDA MOUNTAINS WSA (NM-030-034A)

#### I. GENERAL DESCRIPTION

##### A. Location

The Florida Mountains Wilderness Study Area (WSA) lies in the southeast quadrant of Luna County, approximately 10 miles southeast of Deming, New Mexico.

The U.S. Geological Survey (USGS) topographic maps covering the WSA are the Capitol Dome, South Peak, Florida Gap, and Gym Peak, New Mexico quadrangles. All four of these maps are at the 7 1/2-minute scale.

##### B. Climate and Topography

The Florida Mountains WSA is characterized by an arid, continental climate. Annual precipitation totals average between 8 and 10 inches, with 12 to 14 inches at elevations greater than 6,000 feet. Over 50 percent of the total occurs from July through September as a result of high intensity, short duration thundershowers.

Temperatures reach a maximum in July with average afternoon temperatures ranging from 90° to 100°F. In the higher elevations, the temperatures are typically 10° to 15° cooler. Minimum temperatures during the winter months range from the low 20's to near freezing. Winter daytime temperatures tend to be mild, ranging from 35° to 50°F.

Surface winds are predominantly from the southeast in summer and from the northwest in winter, but local surface wind direction will vary greatly because of local topography. Spring is the windy season. Dry, gusty winds are predominantly from the west-southwest and may exceed 30 mph in the afternoons.

The Florida Mountain range rises over 2,800 feet above the surrounding basins and dominates the landscape for miles around. Several peaks have elevations of over 7,000 feet; among them are Florida, South, and Gym Peaks. The mountain range is approximately 10 miles long, trending north and south, and up to 5 miles wide. The topography is rugged with steep canyons and near vertical cliffs. Alluvial fans slope toward the valley floors on all sides of the mountain range.

##### C. Land Status

The Florida Mountains WSA contains 22,336 acres of public land. There are 80 acres of state inholdings and approximately 30 acres of private inholdings within the WSA boundary. The private inholding is a patented mining claim. (See Map 1 for land status.)



# MAP 1 FLORIDA MTS. (030-034)

## Legend

— WSA BOUNDARY

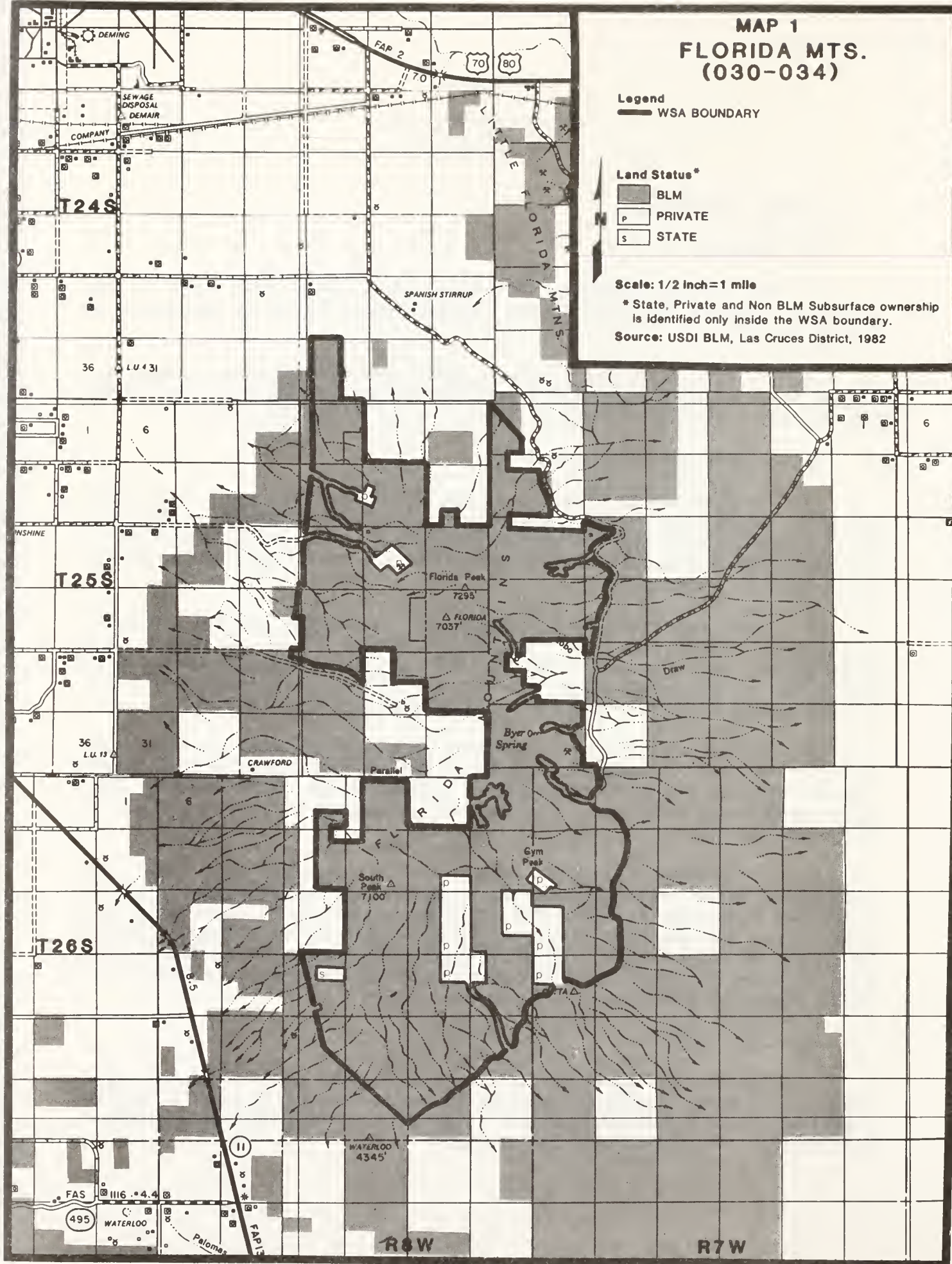
## Land Status\*

- BLM
- P PRIVATE
- S STATE

Scale: 1/2 inch = 1 mile

\* State, Private and Non BLM Subsurface ownership is identified only inside the WSA boundary.

Source: USDI BLM, Las Cruces District, 1982



#### D. Access

The Florida Mountains WSA is legally accessible from County Road B023. Approximately 4 miles south of Deming, New Mexico on State Highway 11, County Road B023 runs due east towards the Little Florida Mountains and Rockhound State Park. After about 6 miles, B023 turns to the southeast for approximately 5 miles. The County maintained road ends on the northeast boundary of the WSA. Additional physical access along the east and south boundaries of the WSA is available from the ranch road continuing south from B023.

## II. EXISTING RESOURCES

### A. Geology

From early Paleozoic through Mississippian time, the Florida Mountains area was a part of a stable shelf environment. During Pennsylvanian time, the Pedregosa Basin formed to the west and an area known as the "Florida Islands" emerged near the Florida Mountains area. Throughout most of the Mesozoic era, this area remained a topographic high.

Orogenic activities beginning in the late Cretaceous period formed the basic internal structure of the Florida Mountains. Thrust faults and steeply dipping reverse faults of Laramide age are abundant in the southern Florida Mountains. The most conspicuous of these is the northwest trending, steeply dipping reverse fault that thrusts what appears to be Precambrian granitic rocks over Paleozoic sediments. Complex thrusting is also evident in the southern part of the range. North-south block faulting during the Tertiary period created the present uplifted mountain along boundary faults. Vertical displacement along these faults appears to be about 4,000 feet (Corbitt 1971).

The oldest rocks in the Florida Mountains are metamorphic rocks of Precambrian age. Approximately 3,000 feet of the Paleozoic sediments overlie these basement rocks. The sediments are primarily shelf carbonates with only two clastic units. Cretaceous and Tertiary conglomerates and siltstones represent the other sediments in the Florida Mountains.

A significant portion of the Florida Mountains consists of igneous rocks. The northernmost intrusive body is a granite dated at 450 to 600 million years in age. A central mass consists primarily of syenite. The southern portion of the range appears to be a large granitic body of Precambrian age. Tertiary volcanics are dominant in the northern end of the mountains. Numerous rhyolite dikes of late Tertiary age cut east-west across the northern half of the range.

### B. Water

The Florida Mountains WSA is situated within the southeast portion of the Mimbres Basin, a closed basin with interior surface water drainage.

Surface water within the WSA drains into the Mimbres Basin through an ephemeral stream system. Principal drainages include Spring and Windmill Canyons to the northeast; Capitol Dome Draw and Mexican Canyon to the northwest; and Copper Kettle, Box, and Victorio Canyons to the southeast. These ephemeral streams flatten out below the alluvial fan slopes and become a nonintegrated system of washes and arroyos in the valley floors. There are several scattered springs in the WSA; however, the springs' contribution to surface flow is limited. They are important locally in support of riparian vegetation.

Ground water in the WSA is available primarily from bolson deposits on the alluvial fans coming off the Florida Mountains. Secondary aquifers consist of Tertiary volcanics and Cretaceous shales, sandstone, and limestone. Water yields from these secondary aquifers are generally small.



The ground water reservoir is recharged mainly during flood runoff by infiltration in ephemeral stream channels. Ground water movement generally follows the direction of major drainage channels towards the valley floors. Water quality in the area is generally very good with low total dissolved solids and low dissolved metals content.

### C. Soils

Two major soil types occur in the Florida Mountains WSA. Soils at higher elevations are residual, ranging in depth from very shallow to moderately deep on slopes from 0 percent to over 70 percent. The soils are typically very cobbly and stony loams interspersed between areas of rock outcropping located on ridgetops, ledges, and cliffs.

At lower elevations, soils formed from mixed materials on old alluvial fans along the footslopes of the mountains. Slopes range from nearly level to about 10 percent. The soils are moderately deep to deep with textures ranging from very gravelly sandy loams to gravelly clay loams.

In addition to the two major soil types, the ephemeral streambeds in the canyon bottoms typically contain sandy soils stratified with gravels and cobbles. Texture and depth of the soils are variable depending on the amount of material deposited or removed by each flow of water.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Florida Mountains WSA consist of five major types:

Vegetation Type	Range Site	Federal Acres
Grass-mixed desert shrub	Hills	12,907
Snakeweed-mixed desert shrub-grass	Gravelly loam	3,413
Creosote-grass	Gravelly	4,411
Snakeweed-mesquite-yucca-other shrubs and trees	Sandy	1,289
Other shrubs and trees-mixed desert shrub	Gravelly sand	316

Many grass species are present in the Florida Mountains WSA. Gramas and tobosa are the most prevalent grass species. Associated shrub species are varied and diverse. The main shrub and tree species on the mountain slopes include snakeweed, sumac, creosote, sotol, beargrass, mesquite, tarbush, prickly pear, feather peabush, yucca, and juniper.

Snakeweed, mixed desert shrubs, and grasses are the dominant vegetation on the gravelly loam areas on slopes around the base of the mountains. The mixed desert shrubs include mesquite, yucca, sumac, Mormon tea, spicebush, mariola, range ratany, and tarbush. Many other shrubs occur

in small quantities. Major grass species present include black grama, tobosa, sideoats grama, threeawns, bush muhly, cane bluestem, and fluffgrass.

The gravelly soils on the south and east slopes of the mountains are dominated by creosote, snakeweed, and mariola. Associated grass species include gramas, threeawns, fluffgrass, and tridens.

Sandy soils occur in the flats surrounding the mountain range. Snakeweed, yucca, mesquite, and other shrubs and trees are the dominant vegetation types. Other shrub species include Mormon tea, Wright's buckwheat, range ratany, sumac, creosote, rabbitbrush, spicebush, fourwing saltbush, and whitethorn acacia. Grass species include tobosa, threeawns, cane bluestem, and sideoats grama in small quantities.

The gravelly sand range sites identified in lower elevation drainages are pseudoriparian and have been identified as having important wildlife values. Mixed desert shrubs and other shrubs and trees are the dominant vegetation types on this range site. These vegetation types include hackberry, Mormon tea, snakeweed, Apacheplume, sumac, mesquite, sotol, juniper, oak, desert willow, ocotillo, mimosa, pinyon, and walnut. Some grasses occur in small quantities.

## 2. Threatened or Endangered Plant Species

The following species were identified and located in or near the WSA (NMSHP and USFWS 1982).

Species: Cereus greggii - night blooming cereus  
Status: Bureau sensitive species proposed for Federal listing.  
Habitat: widespread; does not grow commonly anywhere; needs the microhabitat associated with creosote and bush muhly.

Species: Coryphantha orcuttii var. koenigii - Koenig's coryphantha  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Grows on black limestone on south facing slopes, usually in small, dense clusters at approximately 5,000 feet.

Species: Ferocactus wislizenii - southwestern barrel cactus  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Widespread; rocky, sandy, or gravelly slopes in deserts, grasslands, or canyons; 3,000-5,000 feet.  
Disappearing rapidly due to overcollection.

Species: Pinus edulis var. fallax  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Scattered along canyon bottoms with Apacheplume and junipers.



Species: Sphaeralcea wrightii - Wright's globemallow  
Status: Selected by the New Mexico State Heritage Program as a special concern element.  
Habitat: Rocky slopes in arid grasslands or deserts from 4,600 to 6,000 feet.

## E. Wildlife

### 1. General

The upper elevations of the Florida Mountains WSA contain mixed shrub mountain habitat sites with inclusions of pinyon-juniper sites. A variety of shrub sites are found around the edge of the mountains including creosote, mixed shrub, half-shrub, and snakeweed. Several pseudoriparian sites were identified in lower elevation drainages.

The Florida Mountains are fairly well-watered for a desert range. A number of springs and seeps are found between 5,000 and 6,000 feet. Some of these have riparian vegetation associated with them, such as cattails, willows, and grapevines. Water is also available high on the mountain in several locations at umbrella catchments, seeps, and a trough filled by a miner. Other special habitat features which encourage wildlife use are the extensive cliffs of the Florida Mountains. Prairie falcons and golden eagles both nest on these cliffs.

The wildlife community is similar in most ways to other desert mountain ranges such as the Cooke's Range and the Organ Mountains. The Florida Mountains host a desert mule deer population, prairie falcons, eagles, red-tailed hawks, great horned owls, and nesting birds typical of mixed shrub mountain communities such as ladder-backed woodpeckers, canyon wrens, and black-chinned sparrows.

The wildlife community of the Florida Mountains also differs from nearby ranges. There is a small javelina population and the Florida Mountains are home to an introduced herd of Persian ibex. Fifteen individuals of this exotic species were released in the Florida Mountains in 1970. Seventy-three more animals were released at later dates. In September 1983, 647 Persian ibex were counted during an aerial census of the Big and Little Florida Mountains.

### 2. Threatened or Endangered Fauna Species

There are no known threatened or endangered animal species in the Florida Mountains WSA. Since there is excellent cliff nesting habitat, the range was included in a peregrine falcon survey by the New Mexico Department of Game and Fish in 1980. Both aerial and ground surveys were run. The conclusion of the report was that the Florida Mountains do not provide suitable habitat for peregrine falcons.

## F. Visual

Two scenic quality rating units describe the Florida Mountains WSA. Most of the WSA, composed of the peaks and slopes of the mountains, has a Class A (high) rating. The higher elevations are characterized by

steep, angular rock outcroppings with jagged, vertical intrusions dominating the highest peaks. A variety of reds and grays are the predominant landform colors. The vegetation is diverse in random irregular patterns. Low shrubs and grasses are dominant at the lower elevations, with dark green juniper increasingly scattered in the higher elevations. Vegetation colors range from yellow to green.

The southern part of the WSA has a Class C, or low rating. This area is a flat to gently rolling alluvial plain. Coloration is typically light reddish brown. The vegetation is primarily grasses and low shrubs in muted greens and light browns. Unusually large barrel cacti are located in this part of the WSA.

Most of the WSA, approximately 18,336 acres, is within a Visual Resource Management (VRM) Class II area. Approximately 4,000 acres in the southern part of the WSA are in a VRM Class III.

#### G. Cultural

There are two known prehistoric sites in the Florida Mountains WSA. They consist of a series of bedrock mortars and a fair sized campsite. The campsite is somewhat unusual due to its large size. There has been virtually no survey in this area and none in the higher elevations. The most likely areas for locating undiscovered sites are along the major drainages leading out of the mountains.

Historic use of the WSA has been limited to ranching, which left few remains, and mining. It is not known if any significant structures remain from this period.

#### H. Air

Generally, the quality of air within the Florida Mountains WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms throughout the southern part of the state.

### III. EXISTING AND POTENTIAL USES

#### A. Mineral Development

##### 1. Energy Minerals

There are no known occurrences of oil and gas or geothermal resources in the Florida Mountains WSA. The oil and gas potential within the Florida Mountains area is very low. High mountainous uplift, complex faulting, lack of favorable petroleum source rocks and reservoir rocks, and thin marine sedimentary strata are not favorable geologic conditions for petroleum accumulations.

There are no surface indicators or anomalies that would denote possible occurrences of geothermal resources.

Uranium and thorium minerals occur in the Precambrian granitic and gneissic rocks in various locales in the Florida Mountains. However, economic occurrences have not been found. These radioactive minerals are disseminated in various rock masses in relatively weak concentrations. Occurrences of the radioactive minerals uranium and thorium have not been found in sufficient quality or quantities to be considered significant.

Over half of the area (the Florida Mountains Raptor Nesting Area, approximately 12,338 acres) within the WSA is covered by a special stipulation for energy minerals leasing (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983). Surface disturbing activities would be allowed only during August 1 through January 31 on energy minerals leases within the Florida Mountains Raptor Nesting Area.

##### 2. Non-Energy Minerals

Several types of saleable minerals occur in and around the Florida Mountains WSA. Building stone and marble are exposed in T. 26 S., R. 8 W., Section 4, northwest of South Peak just outside the WSA boundary. Limestone is exposed primarily in the southern half of the Florida Mountains, although some has been removed from a small area south of Capitol Dome in the northeast part of the WSA. The New Mexico State Highway Department has a right-of-way (NM-055609) for a material pit adjacent to the WSA boundary (in T. 26 S., R. 8 W., Section 21) where they operate a gravel pit with a portable crushing and sizing system.

Base and precious metals have been mined intermittently in the Florida Mountains since about 1880. The base metals are lead, zinc, and copper. The precious metals are gold and silver. All of these minerals, except gold, are on the National Defense Stockpile Inventory of Strategic and Critical Minerals. The period during which the most production occurred was from 1880 to 1920.

No mine production records were found in any of the available literature. The number of mine workings (approximately 50) from which there was some production indicates there must have been approximately \$500,000 in ore produced. Ore tonnage from these mines cannot be measured, but the value can be estimated by comparison with other mining locales of the same character where similar amounts of ore were excavated.

Manganese ore production in the Florida Mountains began in 1942 and continued intermittently until 1958. Approximately 60 percent of the output was sold to the Deming Purchasing Depot during a 5-year period from 1952 to 1957. The Depot was operated by the General Services Administration (GSA) to purchase manganese ore for the United States under the Strategic Minerals Purchasing Program. Records of manganese production sold elsewhere are not available.

There are two principal locales in the Florida Mountains where manganese occurs. These locales are the Birchfield area and the South Side manganese area.

The Birchfield area is along the east side of the WSA, north-northeast of Gym Peak in T. 25 S., R. 7 W., Section 31 and the W1/2 of Section 32. The manganese occurs as irregular replacement deposits in Paleozoic limestone beds. There are at least 15 occurrences in the Birchfield manganese-bearing locale. The area contains an unusual amount of manganese mineralization and is favorable for the occurrence of substantial amounts of ore. There are inferred resources of 15,000 to 25,000 tons of good manganese ore. There could be up to 100,000 tons of manganese ore remaining.

The South Side manganese area extends along the southern terminal margin of the Florida Mountains through T. 26 S., R. 7 W., Section 19, and T. 26 S., R. 8 W., Sections 16, 21, 22, 23, and 24. The mineralized footwall of a normal fault is exposed across the terminal end of the mountain for about 6 miles in an east-west direction. There is black manganese staining on much of the rock and thin manganese film occurs in many of the fractures and joints.

The hanging wall side of the fault is down-dropped and is buried under talus and alluvium. There has been no subsurface exploration in this down-dropped fault block to test for mineral potential. The only mineralogical information available is from the manganese ore that has been mined from the Pacheco (Wet King) and Big Pocket Mines. These two mines are in Box Canyon on the cherry-stemmed private surface/Federal subsurface mineral estate in the southern part of the WSA. About 800 tons of manganese ore were produced from these mines from 1952 to 1955.

The presence of rock alteration along major faults in the central and southern parts of the mountains are favorable indicators for ore deposits. Fault controlled, hydrothermally emplaced mineral deposits are exposed in existing mines and prospects. Anticipated mineral activities include prospecting, assessment work, exploration drilling, and core drilling.

The Florida Mountains have been mined and prospected sporadically during the past 100 years. Most of the discovered deposits were fairly small and would not be economic on today's market. Prospecting continues to be active in the Florida Mountains. The potential for base metals, precious metals, and manganese deposits is high.

BLM mining claim microfiche records (November 17, 1983) indicate that there are 55 mining claims located within the WSA or



overlapping the WSA boundary; 49 of these claims were located prior to the passage of the Federal Land Policy and Management Act (FLPMA) of 1976 and are referred to as "pre-FLPMA" claims. The remaining six claims are "post-FLPMA" claims.

In addition, 108 mining claims have been recently located for precious metals in the southeast part of the WSA by Luna Ores, Inc. The claims have been filed in the Luna County Courthouse, but have not yet shown up on the BLM microfiche records available in the Las Cruces District Office. The Luna Ores claims are located on the Federal surface/subsurface and the cherry-stemmed private surface/Federal subsurface mineral estate south of Gym Peak.

Underground exploration by adit development for base and precious metals is occurring on the group of pre-FLPMA unpatented mining claims in T. 26 S., R. 8 W., Section 1, SE1/4 (the Copper Ridge and Anniversary claims). The current mining activities were determined to be grandfathered activities because (a) they are the same types of activities as those occurring on this group of claims on October 21, 1976, (b) they will result in the same kinds of physical and aesthetic impacts, and (c) they represent a geographic extension of previous activities on this group of claims.

#### B. Watershed

Water use within the Florida Mountains WSA is primarily by livestock and wildlife. There is one well facility, two wildlife guzzlers, two umbrella catchments, and six spring developments within the WSA. In addition, there are two undeveloped springs in the WSA. (See Chapter III, Livestock Grazing and Wildlife.) There are no water control structures or land treatments within the WSA.

Erosion hazard ranges from severe on the steep, rocky type soils that have rapid runoff to moderate on the alluvial fans. There are no watershed projects proposed in BLM's land use planning system for this area.

#### C. Livestock Grazing

##### 1. Allotments

Parts of six grazing allotments are within the Florida Mountains WSA. Livestock use in parts of the Florida Mountains is limited due to steep slopes. Licensed grazing use on public land includes cattle and a few horses.



ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Nathan Crawford 2007	5,532	444	960	17%
Neal Crawford (Baker) 2008	5,277	516	418	8%
Gerald Greeman 2025	8,142	1,983	6,174	76%
Leo Koenig 2033	24,857	2,436	5,612	23%
May, Inc. 2035-2539	9,255	1,752	5,580	6%
Delia Perez 2041	7,416	552	3,592	48%
TOTAL			22,336	

## 2. Ranch Management

EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
Gerald Greeman 2025	2 improved springs, trough interior fence	T. 25 S., R. 7 W., Sec. 31 2 miles
Leo Koenig 2033	windmill interior fence	T. 26 S., R. 7 W., Sec. 20 1 1/2 miles
May, Inc. 2035-2539	improved spring improved spring, trough, undeveloped spring 2 improved springs, troughs, undeveloped spring interior fence	T. 25 S., R. 8 W., Sec. 12 T. 25 S., R. 8 W., Sec. 14 T. 25 S., R. 8 W., Sec. 23 2 miles

## Boundary Fences:

Crawford 2007 and Crawford 2008	1/4 mile
Crawford 2007 and Perez 2041	3/4 mile
Koenig 2033 and May 2035	1 3/4 miles
Greeman 2025 and Koenig 2033	1/2 mile
Greeman 2025 and May 2035	1/2 mile
Crawford 2008 and Koenig 2033	1/2 mile
Perez 2041 and Koenig 2033	3 miles
May 2035 and Crawford 2008	3/4 mile

Note: <sup>a/</sup>Information shown in tables reflects Federal acres and animal unit months (AUMs), and rangeland developments on public land.

## 3. Potential Rangeland Developments

A pipeline and trough off of an existing well is proposed on the Leo Koenig allotment (2033) in T. 26 S., R. 7 W., Sections 20 and 21

(BLM Las Cruces/Lordsburg MFP Amendment/EIS, 1983). Only about 1,000 feet of the proposed pipeline would be within the WSA since the well is just inside the southeast boundary of the WSA. The proposed trough would be located approximately one mile outside the WSA boundary.

The location of this proposed rangeland development is tentative. The purpose of the pipeline and trough is not to accommodate increased livestock numbers, but to redistribute existing grazing use over the southern pasture of the Leo Koenig allotment (2033) and relieve grazing pressure around existing livestock waters.

#### D. Recreation

The Florida Mountains provide opportunities for hiking, climbing, and nature study. Hunting for quail, dove, and deer occurs in the area. Three limited permit Persian ibex hunts, trophy and nontrophy, are held in the Florida Mountains annually. Vehicle related recreation use occurs on the WSA boundary roads and the roads cherry-stemmed into the WSA.

The area is also visited by rockhounds. Rockhound State Park is 2 miles north of the WSA's northern boundary. In addition, Spring Canyon State Park (in T. 25 S., R. 8 W., Section 1) is adjacent to the north boundary of the WSA. Access into the Park was recently upgraded and plans for the Spring Canyon facility include more picnic tables, shelters, and the installation of electricity.

Visitor use information for the Florida Mountains WSA is unavailable.

The only BLM plan outlining specific management direction for recreation in the Florida Mountains is the Wildlife Habitat Management Plan (HMP). The HMP specifies that high intensity recreation sites should not be developed until after 1987. This recommendation is based on the opinion that high intensity use could be expected to increase ibex movements off the Florida Mountains into other habitats. After 1987, information will be available on ibex concentration areas and the potential for developed sites can be re-evaluated.

#### E. Education/Research

A number of graduate students (Woodroof 1979; Sutcliffe 1972; Bavin 1975) from New Mexico State University and Colorado State University have conducted studies on the Persian ibex in the Florida Mountains. The area was included in the New Mexico Department of Game and Fish survey for peregrine falcon eyries in 1980.

Bill Isaacs, David C. Johnson, and J. S. Findley have conducted various plant surveys in the Florida Mountains. Corbitt and Woodward (1970) studied the thrust faults of the Florida Mountains and their regional tectonic significance.

#### F. Realty Actions

The New Mexico State Highway Department has a right-of-way (ROW) (NM-055609) for a material pit adjacent to the WSA boundary in T. 26 S.,

R. 8 W., Section 21, SE1/4 SW1/4, SW1/4 SE1/4. The Highway Department operates a gravel pit with a portable crushing and sizing system on the site.

The Columbus Electric Cooperative transmission line ROW (NM-016066) forms approximately 9 miles of the northwest, northeast, and southwest boundaries of the WSA.

On July 30, 1980, Barite of America was issued a 10-year ROW (NM-37536) for a 0.18 mile mine access road in T. 25 S., R. 7 W., Section 30, Lots 3 and 4, and T. 25 S., R. 8 W., Section 24, SE1/4 SE1/4.

The Industrial Communications and Equipment Company was issued a ROW in February 1984 for a solar-powered radio repeater site and the existing cherry-stemmed access road in T. 26 S., R. 8 W., Section 1, SW1/4 NW1/4. The 25-year ROW was issued with the stipulation that the ROW would be revoked and all improvements removed if the Florida Mountains were designated wilderness.

#### G. Wildlife

A Habitat Management Plan (HMP) was completed for the Florida Mountains in 1979. The HMP is a joint plan between BLM and the New Mexico Department of Game and Fish (NMDGF). The objectives of the plan which apply to the WSA are:

1. to maintain or improve the condition of key forage species;
2. to protect vegetation and soil resources;
3. to improve distribution of reliable water sources for big game in the higher elevations;
4. by hunting and other control methods, to limit the ibex population to levels determined to be within the safe and proper carrying capacity of the habitat;
5. to continue additional studies of the ibex including annual census, population ecology, and distribution.

There are two quail guzzlers in the northwest part of the WSA in T. 25 S., R. 8 W., Section 3, SE1/4 and Section 23, SW1/4. Two umbrella catchments have been installed at high elevations in T. 25 S., R. 8 W., Section 24, SE1/4, and T. 26 S., R. 8 W., Section 10, NE1/4. These catchments complete planned water development for the ibex.

The fire section of the HMP specifies that wildfires should be allowed to burn above the 6,200 foot level. This recommendation was not carried forward in a fire plan. However, the Las Cruces District portion of the statewide fire plan is currently in preparation. The original recommendation from the HMP or a let-burn recommendation for the entire range will be carried forward in the statewide fire plan.

#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

The apparent naturalness of the Florida Mountains WSA is affected by a variety of the imprints of man: wildlife waters, rangeland developments, vehicle trails and cherry-stemmed roads, and mining activity.

The two wildlife waters in the northwest part of the WSA are the guzzler type. They have a minimal impact on naturalness. The vehicle trails accessing the waters have a slightly greater impact on naturalness than the wildlife waters. There are two umbrella catchments, made of galvanized metal, within the WSA. They are located at high elevations north of Baldy Peak and north of South Peak. Access to these waters is on foot, by horseback, or by helicopter. They also have a minimal impact on naturalness.

Rangeland developments affecting the naturalness of the area include improved springs, fences, and cherry-stemmed well facilities. The 6 improved springs and approximately 13 1/2 miles of fence in the WSA do not greatly impact naturalness. White Dome Well, Blue Water Well, and Victorio Well are all cherry-stemmed developments along the east side of the Florida Mountains. The facilities at these wells include windmills, storage tanks, drinking troughs, corrals, and loading chutes. The Victorio Well is outfitted with a gasoline powered pumpjack. These developments and the associated access roads, although cherry-stemmed, impact naturalness locally, especially in the areas northeast, east, and southeast of Baldy Peak.

Mining activity and the associated access have had the greatest impacts on the naturalness of the Florida Mountains WSA, especially in the northeast and east-central portions of the WSA. The Stub Mine and Birchfield-Bradley mines are located in the northeast part of the WSA. The Stub Mine consists of two shafts and is accessed by a 1 1/2-mile-long jeep trail. The Birchfield-Bradley mine area and access road are cherry-stemmed. Two buildings, several junked vehicles, mine structures, two mine shafts, and prospect trenches, although within the cherry-stem, impact naturalness in this area.

Approximately 1 mile southwest of the Birchfield-Bradley mines are the Atir and Barite of America (BOA) mines. Several mine shafts, prospects, and the remains of old mine buildings are located in and around Lobo Draw. The access route up Lobo Draw is cherry-stemmed. The post-FLPMA BOA mine access road has the greatest impact on naturalness in this area; however, less than a mile (0.18 mile) of the road is on Federal land within the WSA. This portion of the road on Federal land is covered by a right-of-way and reclamation plan.

Mining impacts affect the quality of the apparent naturalness in the 3 square mile area north of Gym Peak. Several prospects



and a mine shaft are located less than 1/4 mile north of Byer Spring in T. 25 S., R. 7 W., Section 31. The Birchfield manganese mines (San Tex mines) are located in T. 26 S., R. 7 W., Section 6, NE1/4 and T. 25 S., R. 7 W., Section 31, SW1/4. The imprints of man in this area include approximately 20 prospects and open cuts, tailings piles, 2 inclined shafts, the remains of a headframe, and vehicle trails. The Mahoney mines in T. 26 S., R. 8 W., Section 1 are accessed by a cherry-stemmed road climbing the west side of the Florida Mountains from Mahoney Park. Although cherry-stemmed, tunnels, dumps, several vertical shafts, the remnants of loading facilities, and a stone cabin used by the miner impact the quality of naturalness in this area. Grandfathered mining activities are currently proceeding on the group of claims in this area (the Anniversary and Copper Ridge claims). About 600 feet of an existing vehicle trail was improved by clearing brush and light blasting, and an exploration adit is being driven. These activities impact the naturalness of the ridge running south from Baldy Peak and the upper reaches of Copper Kettle Canyon. The dump resulting from the new adit will be visible from parts of Victorio Canyon and Gym Peak.

Approximately 1 mile south of the Mahoney mines in Copper Kettle Canyon is the Priser mine. Imprints of man around this mine include an old cabin, a steel storage tank, two adits, and five prospects. The Silver Cave patented mine is approximately 1/2 mile southeast of the Priser mine. In addition to the mine shaft located on the patented inholding, there are about 10 prospects on the unpatented claims in the area. The surface disturbance associated with these old mines affects the apparent naturalness of the lower southern slopes of Gym Peak and Middle Copper Kettle Canyon.

A windmill, storage tank, and corrals are located about 1/4 mile inside the WSA boundary in T. 26 S., R. 7 W., Section 20, NE1/4 NW1/4. These developments do not greatly affect apparent naturalness.

The southwest and southern parts of the WSA are the most natural. An area of approximately 3,000 acres in the rugged, mountainous southwest part of the WSA around South Peak is natural except for an umbrella catchment to the north-northwest of the Peak. Imprints affecting the alluvial fans and creosote flats 1 1/2 miles south of South Peak include: 3 1/2 miles of jeep trails, 4 miles of fence, the New Mexico State Highway Department's gravel pit (T. 26 S., R. 8 W., Section 21, SE1/4 SW1/4, SW1/4 SE1/4 which is adjacent to the WSA boundary), and the Columbus Electric Cooperative's transmission line, which forms the northwest, northeast, and southwest WSA boundaries.

The apparent naturalness of the northwest part of the WSA is impacted by three cherry-stemmed roads, two jeep trails, and evidence of past mining activity. Many of the mining impacts in this part of the WSA are on the cherry-stemmed Copper Queen and Capitol Dome patented mines. Mining imprints on the unpatented claims adjacent to Capitol Dome include six shafts, three adits, and several prospect pits.

Overall, the Florida Mountains WSA generally appears natural. The quality of naturalness in parts of the WSA, however, are diminished by the cumulative impacts of rangeland developments and mining activity.





Overview of the Florida Mountains.

b. Solitude

Portions of the Florida Mountains WSA provide outstanding opportunities for solitude. The large size of the WSA allows visitors to disperse and avoid the sights and sounds of others, and the rugged topography provides numerous secluded canyons and ridges. The highest quality opportunities for solitude are in the area around South Peak and in the north-central part of the WSA along the spine of the mountain. These areas are away from roads and other imprints of man.

The quality of opportunities for solitude along the east slopes of the Florida Mountains is somewhat diminished by cherry-stemmed roads, rangeland developments, and evidence of past mining activity.

Opportunities for solitude are less than outstanding in the creosote flats in the southern part of the WSA and in the area southwest of the Copper Queen patented mine due to the lack of topographic and vegetative screening.

### c. Primitive and Unconfined Recreation

The Florida Mountains WSA offers a variety of outstanding primitive recreational opportunities. The area is large enough to support a three or four day pack trip. Opportunities also exist for rock climbing, horseback riding, nature study, photography, and hunting.

The rugged mountain range, with its steep ridges and canyons, offers an excellent opportunity to use outdoor skills and to interact with a natural environment. Opportunities for primitive recreation are enhanced by the size of the WSA and the diversity of vegetation and topography found in the WSA.

The state and private lands adjacent to the central part of the WSA in and around Mahoney Park and Baldy Peak and in Box Canyon and Copper Kettle Canyon detract from the quality of opportunities for primitive recreation in the WSA. These non-Federal lands disrupt the topographic integrity of the area and limit destination points for visitors.

## 2. Special Features

The Florida Mountains WSA contains special ecological and scenic features.

The ecological features consist of vegetation values of scientific and educational interest. The plant species in the WSA are numerous and diverse. The WSA provides habitat for a Bureau sensitive plant species proposed for Federal listing and four plant species selected by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation). The Florida Mountains have outstanding scenic features with a Class A (high) scenic quality rating (see Chapter II, Visual).

## 3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of the multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

## 4. Diversity

### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the area as being in the Chihuahuan Desert Province with a potential natural vegetation of grama-tobosa shrubsteppe.

The general nature of the Bailey-Kuchler System fails to show the vegetative variety and diversity of the WSA. Further refinement of the system shows the following vegetation types in the WSA:

<u>Vegetation Type</u>	<u>Acres</u>
grama-tobosa shrubsteppe	20,731
mesquite acacia savanna	1,289
Trans-Pecos shrub savanna	316

b. Distance from Population Centers

The Florida Mountains WSA is approximately 2 1/2 hours driving time from El Paso, Texas; 1 1/2 hours from Las Cruces, New Mexico; 5 1/2 hours from Albuquerque, New Mexico; 4 1/2 hours from Tucson, Arizona; and 6 1/2 hours from Phoenix, Arizona.

B. Manageability

Several factors affect the potential of the Florida Mountains WSA to be managed as wilderness: patented mines, existing mining claims, land status, and boundary configuration. These factors represent manageability conflicts because of the high potential for base metals, precious metals, and manganese in the Florida Mountains.

Strategic and critical minerals are known to occur in the Florida Mountains and there has been production from mines in the area in the past. Future mineral activities in the Florida Mountains are both possible and unpredictable. The Copper Queen and Capitol Dome patented mines are cherry-stemmed out of the northeast part of the WSA, and the Silver Cave patented mine is an inholding of approximately 30 acres in the southeast part of the WSA. Mining activities at the patented mines could degrade wilderness values in the northeast or southeast parts of the WSA. Upgrading the existing jeep trail in T. 26 S., R. 7 W., Sections 7, 8, and 18, to provide better access to the Silver Cave mine inholding would also degrade wilderness values.

There are numerous mining claims within the Florida Mountains WSA. These claims affect the manageability of the WSA in two ways:

1. The FLPMA specifies that mining uses that existed on the date of approval of the Act may continue in the same manner and degree during the time that an area is under wilderness review. Such mining uses are grandfathered and may continue even if the uses would impair wilderness suitability.

Mining activities are currently proceeding in the same manner and degree under the grandfather clause on the Anniversary and Copper Ridge groups of claims in the Mahoney mines area. These claims in T. 26 S., R. 8 W. cover most of Section 1 and parts of Section 12.

In addition, mining claimants may be recognized as having a valid existing right if a valid discovery had been made on the claim before the passage of FLPMA on October 21, 1976, and the claimant can show BLM that the claim continues to be supported



by such a discovery. Valid existing rights convey a more liberal development standard than grandfathered rights in that activities on valid claims are not limited to the same manner and degree. When it is determined that the valid existing rights can be exercised only through activities that will impair wilderness suitability, the activities will be regulated only to prevent unnecessary and undue degradation.

If any of the pre-FLPMA claims in the Florida Mountains WSA which meet the above criteria for grandfathered activities or valid existing rights are developed, wilderness values could be degraded before the area is designated wilderness.

2. Once an area is designated wilderness, the provisions of the Wilderness Act of 1964 and the Wilderness Management Policy (WMP) (BLM 1981) apply. Under the Wilderness Act and the WMP, holders of mining claims validly established in an area prior to its designation as wilderness may develop their claims in accordance with the 43 CFR 3809 regulations, "Surface Management of Public Lands Under U.S. Mining Laws." Although exercise of the valid existing rights of mining claimants must be with the least possible impact on the wilderness resource and claimants will be required to prevent unnecessary or undue degradation of the land, mining operations may impair wilderness values if there are no reasonable alternatives. In this case, wilderness values could continue to be degraded after the area is designated wilderness.

The land status in the Florida Mountains also affects the manageability of the area as wilderness. The land status in this mountain range is a mosaic of state, private, and public lands. As a result, the WSA boundary is very convoluted. For example, fairly large parcels of private land are cherry-stemmed in Copper Kettle and Box Canyons in the south and southeast parts of the WSA. The subsurface mineral estate on these particular parcels is in Federal ownership. Split-estate parcels of this kind are also located adjacent to the WSA boundary in and around Windmill Canyon and Lobo Draw (T. 25 S., R. 7 W., Sections 18 and 30, respectively) and Lovers' Leap Canyon and Mahoney Park (T. 25 S., R. 8 W., Sections 12 and 26, respectively). These split-estate parcels represent manageability problems because of the mineral potential of the WSA. Recently located mining claims almost entirely cover the split-estate parcels in Box Canyon and Copper Kettle Canyon. The Federal Government has no regulatory authority for surface management of mining activities on private surface/Federal subsurface lands. Restrictions on surface disturbance and plans for reclamation would be totally dependent upon agreements reached between the private surface landowner and the mining claimant. Nonwilderness uses such as mining activity on these lands or the state land around Dragon Ridge and Baldy Peak (T. 25 S., R. 8 W., Sections 2 and 36 and T. 26 S., R. 8 W., Section 2, respectively) could degrade wilderness values in the WSA. The uncertain long-term management of these lands represents a major manageability problem.

Because of the Florida Mountains' high mineral potential, the numerous mining claims in the WSA, and the land status and boundary configuration of the WSA, the BLM could not manage the area to preserve existing wilderness values in the long-term.

## V. PUBLIC INVOLVEMENT OVERVIEW

Since the beginning of the BLM wilderness review, the determination of wilderness characteristics in the Florida Mountains has been especially difficult and controversial.

After completion of the initial inventory, the BLM proposed in the April 1979 Wilderness Review New Mexico Situation Summaries that the Florida Mountains be dropped from further wilderness inventory. This recommendation was based on the rationale that, "The effects of numerous intrusions, abandoned and operating mines, roads in major areas, and utility lines result in a lack of naturalness in the area and a lack of outstanding opportunities... ."

During the public review of the Situation Summaries, many people disagreed with the BLM's original recommendation. More public comments were received on the Florida Mountains unit than any other unit in the Las Cruces District. The New Mexico Wilderness Review Initial Inventory Decision (BLM 1979) reflected the public sentiment: "Because of the comments received, a reasonable doubt exists that all or portions of the area may contain wilderness characteristics and the area will be intensively inventoried to confirm public comment."

Numerous roads were identified during the intensive inventory that divided the original inventory unit into smaller roadless areas. Four of these roadless areas are greater than 5,000 acres and were evaluated for their wilderness characteristics. The BLM judged that three of these roadless areas (identified as subunit NM-030-034B) lacked outstanding opportunities for solitude or primitive recreation and, therefore, did not meet the criteria for a WSA. However, one of these areas (subunit NM-030-034A in the central, mountainous portion of the unit) appeared to have at least minimum wilderness characteristics and BLM proposed in the New Mexico Wilderness Study Area Proposals (BLM 1980) that an area of 18,904 acres be designated as a WSA. Due to the subjectivity of this decision, heavy emphasis was given to public comments prior to the formulation of a final decision.

During the ensuing public review period on the WSA Proposals, numerous public comments were received and the Florida Mountains unit again proved to be one of the more controversial areas. Many of the comments included photographs, road affidavits, and newspaper clippings. Forty-three personal letters supported WSA status for the Florida Mountains. Most of the personal letters favoring wilderness study supported the Florida Mountains primarily because of the area's supplemental values and outstanding opportunities for solitude and primitive recreation. Thirty-nine personal letters opposed WSA status primarily because of mining and grazing impacts on naturalness.

After a re-evaluation of the Florida Mountains' wilderness characteristics based on public comments, additional field checks, and all inventory information, BLM released the entire Florida Mountains unit from further wilderness review in the New Mexico Wilderness Study Area Decisions (BLM 1980). This decision was based on BLM's judgment that, "...the wilderness quality of the unit is negated by mining activity and grazing



improvements. There are twenty-one known unpatented mining claims within the boundaries of the originally proposed WSA. Numerous prospect pits, tunnels, shafts, and mine dumps are associated with these claims. Range improvements within the originally proposed WSA or along its boundaries include windmills, troughs, pipelines, developed springs, corrals, fences, and dirt tanks. Additionally, the configuration of the area is very irregular due to a combination of corridor roads and land status." "...due to the cumulative effects of the impacts described above, the unit does not appear natural."

The BLM's decision to release the entire Florida Mountains unit (both subunits NM-030-034A and NM-030-034B) was subsequently protested by two parties. The State Director denied both protests and both parties appealed to the Interior Board of Land Appeals (IBLA). After reviewing the appeals, the IBLA ruled that "there is sufficient doubt as to the adequacy of BLM's assessment of the naturalness of subunit NM-030-034A and the record does not support BLM's conclusion, the BLM decision...must be set aside and the case remanded to BLM for reconsideration of the naturalness of that subunit. BLM's denial of (the) protest as to the remainder of the Florida Mountains unit is affirmed."

After re-evaluation of the naturalness of subunit NM-030-034A as directed by the IBLA, BLM concluded that the area meets the minimum naturalness criterion for a WSA. The quality of the area's apparent naturalness is addressed in this report.

## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 22,336 acres of public land within the Florida Mountains WSA would be recommended suitable for wilderness designation. (See Map 1 for location of the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (WMP) (BLM 1981).

Under the All Wilderness Alternative, development work, extraction, and patenting of mining claims existing in the Florida Mountains WSA as of the date of designation would be allowed if the claims are determined to be valid. A mineral examination and subsequent mineral report must confirm that as of the date of designation, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success in developing a valuable mine. Undue and unnecessary degradation of wilderness character would not be allowed, and the use of mechanical and motorized equipment would be authorized only if there are no reasonable alternatives. A Plan of Operations for mining on valid existing claims would include reclamation measures to provide for restoration as near as practicable of the surface of the land disturbed.

At the present time, there are approximately 163 existing mining claims within the boundary of the WSA and on the cherry-stemmed private surface/Federal subsurface mineral estate in the southern and southeastern part of the WSA. Estimates as to the number or locations of claims that would prove to be valid are beyond the scope of this report, as are predictions of the impacts of mining activities on such claims. Therefore, only impacts of a general nature resulting from possible mining activities are identified.

Under the All Wilderness Alternative, the impacts to wilderness values would be significant because of the added protection of Congressional designation. The impacts to locatable mineral resources could also be significant under this alternative. The impacts on nonprimitive types of recreation, cultural resources, air, and education/research are clearly insignificant; therefore, they are not discussed.

#### 1. Impacts to Minerals

There has been no energy minerals production within the WSA. Because the potential appears to be low, impacts to the energy minerals industry would be minor in the short-term. The loss of economic benefits to the energy minerals industry would be minimal in the short-term. It is assumed that exploration and leasing for energy minerals would not be allowed after wilderness designation. As a result, there would be no opportunity for further assessment of the energy minerals potential or for production and development. Although the energy minerals industry could be affected in the long-term, the impacts would not be significant.

Strategic and critical minerals are known to occur in and around the Florida Mountains WSA, and several mines in the northeast and southeast parts of the Florida Mountains are patented. There has been production in the past. Numerous unpatented claims are located within the WSA and a BLM Mineral Resource Inventory (1981) indicates high mineral potential. Valid claims located before wilderness designation could be developed to their full potential. However, during development, the mining companies could incur additional operating costs depending on restrictions on the type and location of access.

It is assumed that no new exploration, prospecting, or location of mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of the existing valid claim boundaries. Full development of the mining district could not take place under this alternative. Most of the minerals known to occur in the area are on the list of strategic and critical minerals. Wilderness designation could have significant impacts on locatable mineral resources.

## 2. Impacts to Other Resources and Uses

### a. Water, Soils, Vegetation

Under wilderness management, restrictions on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation including threatened or endangered plant species (see Chapter II, Vegetation) in the WSA. Approximately 7 miles of vehicle trails would be closed which would allow re-establishment of vegetation in the long-term.

The proposed pipeline and trough off of the existing well in T. 26 S., R. 7 W., Section 20 on the Leo Koenig allotment (2033) (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983) could be installed if it were determined through site-specific analysis to be necessary for the purpose of rangeland or wilderness protection. Road construction and motorized access along that portion of the pipeline within the designated wilderness (approximately 1,000 feet) would not be authorized. Burial of the pipeline would result in short-term impacts due to soil disturbance and removal of vegetation. Although the proposed trough would be approximately 1 mile outside of the designated wilderness boundary, the existing forage utilization patterns within the wilderness area could be affected. The proposed trough would provide a source of water in addition to the existing well in Section 20 which would be inside the designated wilderness boundary. An additional water source could relieve grazing pressure around the existing well and more evenly distribute existing livestock grazing use.

Other than the possibility of development of valid existing mining claims, no major surface disturbing activities are proposed in existing BLM plans. The added protection for water, soils, and vegetation as a result of wilderness designation would not be significant.

### b. Wildlife

Wildlife and wildlife habitat in the Florida Mountains would continue to be managed under the Habitat Management Plan.

Restrictions on surface disturbing and mechanized activities and vehicular access would provide protection of wildlife habitat and reduce the potential for harassment of wildlife.

The vehicle trails that provide access to the two wildlife guzzlers in the northwest part of the WSA would be closed under this alternative. However, vehicular access for maintenance of the guzzlers or helicopter access for maintenance of the umbrella catchments could be authorized if there were no practical alternatives.

Other than the possibility of development of valid existing mining claims, there are no existing or proposed activities that would result in extensive surface disturbance. In addition, only 7 miles of vehicle trail would be closed to use under this alternative. The impacts on wildlife under this alternative would not be significant.

#### c. Visual

Existing visual resources would be protected. The area would be managed as a VRM Class I which allows only minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity. The quality of the existing visual resources would be maintained. The impacts to visual resources under this alternative would not be significant.

#### d. Livestock Grazing

Motorized access on approximately 7 miles of vehicle trails within the designated wilderness would not be permitted. Checking livestock would be on foot or horseback.

The windmill on the Koenig allotment (2033) and two improved springs on the Greeman allotment (2025) would be the only rangeland developments in the area that would be denied their existing vehicular access through restriction on existing vehicle trails. Authorization for vehicular access or for the use of mechanized equipment to maintain these rangeland developments would be given only if there were no practical alternatives and would be on a permit basis.

The proposed pipeline and trough off of the existing well in T. 26 S., R. 7 W., Section 20 on the Leo Koenig allotment (2033) could be installed if it were determined through site-specific analysis to be necessary for the purpose of rangeland or wilderness protection. Road construction and motorized access along approximately 1,000 feet of the pipeline within the designated wilderness would not be authorized.

The impacts to livestock operators would not be significant and would consist primarily of the minor inconveniences of securing permits.

#### e. Realty Actions

Under this alternative, the Industrial Communications and Equipment Company's right-of-way (ROW) for the solar-powered radio repeater



site and access road (in T. 26 S., R. 8 W., Section 1) would be revoked and the facilities would be removed.

f. Wilderness Values

Wilderness designation would provide the existing wilderness values in the area with long-term Congressional protection. However, the Florida Mountains WSA could not be managed to preserve existing wilderness values in the long-term. The outside sights and sounds of nonwilderness uses, such as mining activities on the non-Federal surface lands cherry-stemmed in the WSA and adjacent to the WSA, could degrade wilderness values. The exploration and development of valid mining claims in the WSA could result in significant impacts depending on the locations and extent of such activities and access requirements.

Under this alternative, the impacts on wilderness values could be significant.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 22,336 acres of public land in the Florida Mountains WSA would be recommended unsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

Over the long-term, the WSA could be fully explored and prospected and additional mining claims could be located and developed. Estimates as to the numbers of new claims that would be located or predictions of the impacts of development are beyond the scope of this report.

Under the No Action/No Wilderness Alternative, wilderness values could be significantly impacted in the long-term. The impacts to air and education/research are not discussed because they are clearly insignificant.

1. Impacts to Wilderness Values

The wilderness values in the Florida Mountains WSA would not be provided with long-term Congressional protection. Management of the area as proposed in existing BLM land use plans would be subject to administrative change in the long-term.

The impacts of mining operations for locatable minerals on wilderness values within the area could be minimal to major depending on the extent and locations of the activities. Mining activities would be regulated to prevent unnecessary and undue degradation and reclamation, where reasonably practicable, would be required. However, the impacts of mining development and construction of required vehicular access could cause significant degradation of natural values and opportunities for solitude and primitive recreation. Construction of additional access could also partition the WSA into roadless areas less than 5,000 acres.



Unrestricted vehicular use on the existing trails and cherry-stemmed roads in the WSA by recreationists, grazing permittees, and miners would disrupt solitude in the vicinity of these trails and roads.

Under this alternative, the impacts to wilderness values could be significant in the long-term because protective management of the area would not be ensured through Congressional designation.

## 2. Impacts to Other Resources and Uses

### a. Water, Soils, Vegetation

There could be a loss of vegetation and topsoil and a small increase in sediment load if mining claim development and construction of new access occurs. However, since mining activities would be regulated to prevent unnecessary and undue degradation, measures would be required to control erosion and water runoff, and reshaping and revegetation of disturbed areas would be undertaken where reasonably practicable. The proposed pipeline and trough on the Leo Koenig allotment (2033) (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983) could be implemented without the constraints of the WMP. Burial of the pipeline and motorized access along the pipeline would result in soil disturbance and removal of vegetation along the 1,000 feet of pipeline within the WSA. This would be a permanent impact if a road is established along the pipeline. The total disturbance within the WSA would be less than one acre. The cumulative impacts to water, soils, and vegetation under this alternative would not be significant.

### b. Wildlife

If mining activities for locatable minerals are initiated, a certain amount of wildlife habitat could be destroyed and there would be direct disturbance to animals in the mining regions because of the added activity. Although such activity could affect nesting raptors and the Persian ibex, the impacts would not be significant.

### c. Visual

Most of the area (18,336 acres) would be managed as a VRM Class II. In this VRM class, changes in the basic elements of the landscape as a result of management actions would be permitted as long as the changes do not attract attention. If development of mining claims occurs, the existing visual resources could be degraded. However, the overall impacts on visual resources would not be significant since many of the mining facilities and access routes could be located so that they are effectively screened by the topography and vegetation and, where possible, comply with the VRM Class II guidelines.

Approximately 4,000 acres in the southern part of the WSA would be managed as a VRM Class III. In this VRM class, moderate changes in the landscape would be allowed as long as the visual contrast is subordinate to the existing landscape. Since most surface disturbing activities could be mitigated to comply with the restrictions of a VRM Class III, the impacts to visual resources in this part of the WSA would not be significant.

d. Cultural

Although unrestricted access could accelerate the current rate of vandalism to cultural sites, the overall impacts to cultural resources under this alternative would not be significant.

e. Minerals

There would be no impacts on locatable minerals exploration and development. Such activities would be regulated under the Surface Management Regulations (43 CFR 3809) to prevent unnecessary and undue degradation to the land. There would be no economic benefits forgone under this alternative.

f. Livestock Grazing

All rangeland developments could be checked and maintained on a convenience basis using motorized equipment. The proposed pipeline and trough on the Leo Koenig allotment (2033) (BLM Las Cruces/Lordsburg MFP Amendment/EIS 1983) could be implemented without consideration of the constraints of the WMP. There would be no impacts to livestock grazing.

g. Recreation

Although mining operations for locatable minerals could require the upgrading of existing access or the construction of new access, and the improved access could result in an increase in vehicle related recreation, the impacts would not be significant.

h. Realty Actions

Under this alternative, the Industrial Communications and Equipment Company's ROW for a radio repeater and access could be renewed at the discretion of the Las Cruces/Lordsburg Resource Area Manager.

## VII. RECOMMENDED ACTION

### A. Recommended Action Description

The recommended action for the Florida Mountains WSA is the No Action/No Wilderness Alternative. The entire 22,336-acre WSA is recommended nonsuitable for wilderness designation.

### B. Rationale

Mineral resource conflicts, potential wilderness manageability conflicts, and the quality of the area's naturalness are the reasons for recommending the Florida Mountains WSA nonsuitable for wilderness designation.

Strategic minerals are known to occur in the Florida Mountains and there has been production from mines in the WSA in the past. At some time after designation, prospecting and location of new claims would be prohibited and only existing valid claims could be developed. Mineral trends could not be followed out of the existing valid claim boundaries. The full potential of the area for strategic minerals could not be assessed and exploited. The No Action/No Wilderness Alternative eliminates conflicts with minerals.

The most significant manageability conflicts in the Florida Mountains WSA are related to mining and the area's mineral potential. At the present time, there are 163 mining claims located throughout the Florida Mountains WSA and on private surface/Federal subsurface mineral estate lands cherry-stemmed in the southern part of the WSA. As noted above, strategic minerals are known to occur in and around the WSA. It is likely that some of these claims could be valid, in which case mining operations on these claims could be allowed to degrade wilderness values after the area is designated wilderness. In addition, 49 of the existing claims are pre-FLPMA. Grandfathered mining uses on pre-FLPMA mining claims could be allowed to impair wilderness values before the area is designated wilderness. Mining activities are presently occurring in the WSA in the Mahoney mines area (T. 26 S., R. 8 W., Section 1) under the grandfather clause.

The uncertain long-term management of state land and private surface/Federal subsurface lands in the Florida Mountains represent a significant potential wilderness management conflict. There is potential for mining activities on the non-Federal surface lands in Lobo Draw, Copper Kettle Canyon, Box Canyon, around Baldy Peak, and Dragon Ridge. These non-Federal surface parcels are cherry-stemmed or adjacent to the WSA boundaries. Nonwilderness uses could have substantial impacts on wilderness values within the WSA.

The third reason for recommending the Florida Mountains WSA unsuitable for wilderness designation is the quality of the area's naturalness. As discussed in Chapter V, Public Involvement Overview, the BLM proposed to release this area from further wilderness review at the conclusion of the Initial Inventory in April 1979 and did so at the conclusion of the Intensive Inventory in November 1980. The Initial

Inventory recommendation and Intensive Inventory decision were based on BLM's judgment that the area lacked apparent naturalness. After the Interior Board of Land Appeals reviewed appeals on BLM's November 1980 decision, BLM again re-evaluated the Florida Mountains' naturalness. BLM subsequently designated the area a WSA after concluding that the area meets the minimum criterion of being apparently natural. During the wilderness study, the quality of the WSA's apparent naturalness was considered. Overall, the Florida Mountains WSA appears natural, but portions of the WSA are cumulatively impacted by cherry-stemmed rangeland developments and roads, surface disturbance resulting from past mining activity, and other less major impacts such as fences, jeep trails, and improved springs. The quality of the Florida Mountains WSA's naturalness diminishes the overall value of the area for preservation as wilderness.

### C. Consistency With Other Plans

The recommended action for the Florida Mountains WSA does not conflict with any of the decisions in the Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (BLM 1983). At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Las Cruces District Wilderness Supplemental Draft Environmental Assessment.



## APPENDIX B

### ANTELOPE WSA (NM-020-053)

#### I. GENERAL DESCRIPTION

##### A. Location

The Antelope Wilderness Study Area (WSA) is located approximately 6 miles southeast of San Antonio, New Mexico. The WSA is bound on the west by the Bosque del Apache National Wildlife Refuge and on the east by the White Sands Military Reservation.

The U. S. Geological Survey (USGS) topographic maps covering the WSA are the Cerro Colorado, San Antonio SE, Little San Pasqual Mountain, and San Marcial, New Mexico quadrangles. All four of these maps are at the 7 1/2-minute scale.

##### B. Climate and Topography

The Antelope WSA is characterized by a semiarid climate with mild winters and hot summers. Average annual precipitation is 8 to 10 inches, with more than half of the moisture occurring during July, August, and September. The average annual temperature is 60°F, with extremes at 50° below zero and 110°F.

This WSA is a rolling desert prairie with elevations ranging from 4,767 feet to 5,065 feet. The foothills of Little San Pasqual Mountain extend into a small portion of the WSA along its southwest boundary.

##### C. Land Status

The WSA contains 20,710 acres of public land. There are 680 acres of state inholdings within the WSA boundary. (See Map 2 for land status within the WSA boundary.)

##### D. Access

Access to the WSA is provided by a maintained county road which leaves U.S. Highway 380 approximately 6 miles east of San Antonio, New Mexico. County Road 2113 is the primary access road to the eastern portion of the WSA. A road extends approximately 3 miles along the fence which separates the WSA from the Little San Pasqual Wilderness and provides access to the northwestern edge of the WSA. Unimproved ranch access routes traverse the WSA from east to west in three locations.



# MAP 2 ANTELOPE (020-053)

## Legend

— WSA BOUNDARY

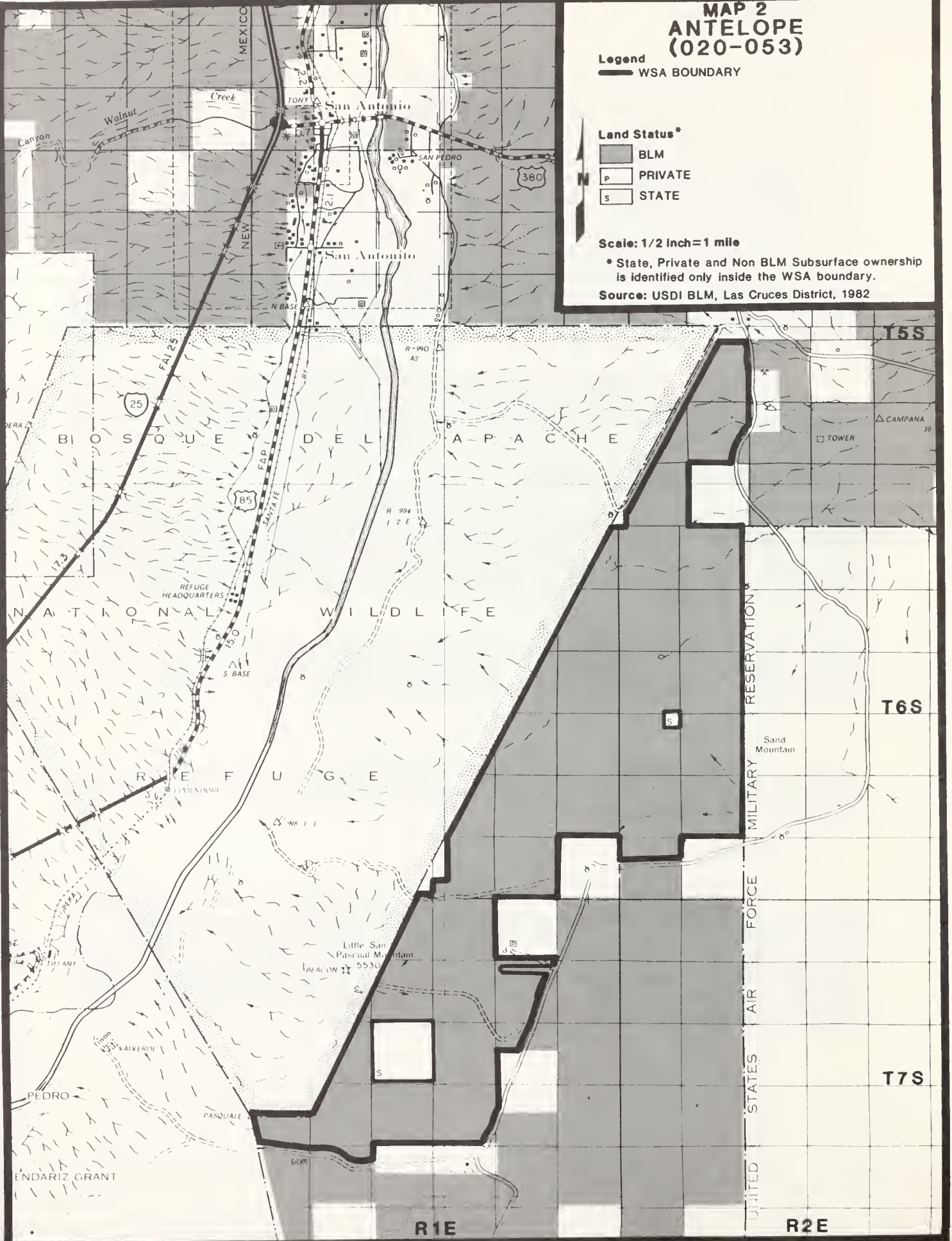
## Land Status\*

- BLM
- P PRIVATE
- S STATE

Scale: 1/2 inch=1 mile

\* State, Private and Non BLM Subsurface ownership is identified only inside the WSA boundary.

Source: USDI BLM, Las Cruces District, 1982



## II. EXISTING RESOURCES

### A. Geology

The Antelope WSA is situated within the Rio Grande Rift and is within the Basin and Range Physiographic Province. Specifically, it is located on the western edge of the Jornada del Muerto Basin. The northern portion of the WSA contains predominantly Tertiary valley-fill sediments of the Santa Fe formation. The southern portion of the WSA contains mostly Quaternary alluvium and bolson deposits, although there is some exposure of Permian San Andres limestone in the extreme southwestern portion of the WSA.

### B. Water

The northern part of the Antelope WSA is located in the Rio Grande Basin and the southern half drains into the Jornada del Muerto, a closed basin. Several ephemeral streams drain the WSA; however, because the area is nearly level and has sandy soils which have high infiltration rates, there is little runoff. Ephemeral stream flow occurs in response to summer thundershowers.

Ground water occurs primarily in alluvium and bolson deposits at depths of 55 to 400 feet. It also occurs in the Datil formation, the Manzano group of the Yeso formation, and the Santa Fe group. There are little water quality data available, but what does exist indicates that sulfate levels exceed the recommended limit for livestock and wildlife as established by the National Academy of Sciences (BLM 1980).

### C. Soils

Approximately 90 percent of the WSA is characterized by sandy soils on nearly level slopes. Surface textures range from fine sands to fine sandy loams. Subsoil and substratum textures range from sands to loams. There is a small area just east of Little San Pasqual Mountain that has a loamy soil with textures ranging from loam to clay loam. The sandy soils have a very high soil blowing hazard. These soils are well drained and have slow runoff.

### D. Vegetation

#### 1. General

The vegetation and associated range sites within the Antelope WSA consist of seven major types:

Vegetation Type	Range Site	Federal Acres
Broom dalea	Deep sand, Sandy	10,312
Sand sagebrush	Sandy	5,022
Creosote	Gravelly, Loamy, Limestone hills	1,637
Mesquite	Sandy, Loamy	1,631
Mid grass	Loamy	993
Yucca	Sandy	836
Short grass	Sandy	279

The broom dalea vegetation type occurs on approximately half of the WSA. This type also includes mesquite, snakeweed, sand sagebrush, and littleleaf sumac. The common grasses are fluffgrass and dropseeds.

The sand sagebrush type occupies about one-fourth of the area. Other common species include yucca, snakeweed, black grama, and dropseeds.

Creosote areas are dominated by creosote, tarbush, and snakeweed. Other shrubs in the creosote vegetation type include Mormon tea and mesquite. Predominant grass species include fluffgrass, threeawns, dropseeds, bush muhly, black grama, and galleta. This vegetation type has a high proportion of annuals; the most common being annual snakeweed, common bahia, buckwheats, spectaclepod, sixweeks grama, sixweeks threeawn, and windmill grass.

The mesquite vegetation type also contains Mormon tea, snakeweed, fourwing saltbush, and sand sagebrush as associated shrubs. Common grasses are black grama, fluffgrass, galleta, and dropseeds.

The mid grass vegetation type is dominated by alkali sacaton in the higher rangeland condition categories, but contains higher proportions of burrograss and snakeweed in the lower rangeland condition categories.

The yucca vegetation type contains soaptree yucca, a tree-like species several meters tall. Other common shrubs are snakeweed and Mormon tea. Black grama, galleta, threeawn, and dropseeds are the most common grasses.

Short grass, the smallest vegetation type, is dominated by black grama in some places and by dropseeds in others. Additional common short grass species are ring muhly, bush muhly, galleta, and threeawns. Scattered individuals of snakeweed, sand sagebrush, and other shrubs can also be found.

## 2. Threatened or Endangered Plant Species

Spellenberg (1977) and the New Mexico State Heritage Program (1983) do not list any known occurrences of Federal or state-listed plant



species in the Antelope WSA. However, the following species may occur in the WSA.

Species: Coryphantha duncanii  
 Status: State of New Mexico biologically threatened; Federal candidate species.  
 Habitat: Limestone hills.

Species: Cryptantha paysonii  
 Status: Selected by the New Mexico State Heritage Program as a special concern element.  
 Habitat: Common in limestone areas associated with gypsum.

Species: Hymenoxys vaseyi  
 Status: Selected by New Mexico State Heritage Program as a special concern element.  
 Habitat: Found on Little San Pasqual Mountain in the Bosque del Apache National Wildlife Refuge.

## E. Wildlife

The Antelope WSA supports approximately 155 wildlife species, which are comprised of 35 mammal species, 50 reptile and amphibian species, and 70 resident and migratory bird species. The most common wildlife species within this WSA are coyotes, black-tailed jackrabbits, desert cottontails, pronghorn, raptors, and various songbirds.

The Antelope WSA contains two major Standard Habitat Sites (SHS's). These SHS's are described briefly below.

### 1. Shrub Pediment

The shrub pediment SHS is a mixture of short grass, mid grass, tall grass, and yucca subtypes. Yucca types can be found throughout the SHS with it being a dominant plant aspect wise in some places. The grasses occur mostly in the lower lying edges of the Jornada Plains where disturbance by humans or livestock seem to be most evident. Species diversity appears low for the SHS, possibly due to livestock pressure and lack of good cover.

### 2. Creosote Hill

The principal areas of the creosote hill SHS are the rolling upland hills east of the Rio Grande. Ground cover is sparse when creosote grows in nearly pure stands. This area has many arroyos that run toward the river.

## F. Visual

The WSA is an expansive upper Chihuahuan desert environment characterized by little topographic or landscape diversity. The line of the landform is horizontal; colors are generally tans and muted greens. The Antelope WSA's location in a large desert bolson affords wide vistas of distant mountain ranges to the east and west of the WSA.

The WSA is in a Visual Resource Management (VRM) Class IV.

### G. Cultural

A total of five prehistoric sites have been recorded in the Antelope WSA. They consist of lithic and ceramic scatters usually with associated hearths. These sites were located during a survey of three sections of the WSA associated with a Class II survey of the Jornada Resource Area in 1976 and a survey for a proposed pipeline in 1981. Personal communications with individuals who are familiar with the area have revealed a number of unrecorded sites in the Antelope WSA. A multicomponent Paleo-Indian site is located in the eastern portion of the WSA and Archaic sites are located in blowouts and on ridges throughout the WSA. The sand covering the WSA probably conceals numerous sites.

### H. Air

Generally, the quality of air within the Antelope WSA is good. The air quality in the WSA does not exceed the state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May), when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms.



### III. EXISTING AND POTENTIAL USES

#### A. Mineral Development

##### 1. Energy Minerals

###### a. Oil and Gas

There are no known oil and gas occurrences and no test wells have been drilled within the WSA. Test wells have been drilled 25 miles northeast, 5 miles west, and 20 miles south of the WSA. All of these wells are dry holes. Although the Jornada Basin in general is considered to have low to moderate potential for the occurrence of oil and gas, the WSA's presence within the Rio Grande Rift suggests that any oil and gas that may have been present is now gone because of faulting associated with the Rift. The oil and gas potential in the Antelope WSA is low.

###### b. Geothermal

Anomalous heat flows and moderate to high geothermal potential are associated with the Rio Grande Rift. However, in the WSA, there is no direct evidence of underlying or proximate magma chambers or other positive geothermal indicators as in the Socorro, New Mexico area to the north. For this reason, the geothermal potential of the area is considered low.

###### c. Coal

Coal occurs in the Cretaceous Mesaverde formation northeast of the WSA. This area, known as the Carthage Coal Field, is situated on a fault-bound block that has been uplifted and internally fractured. The WSA is on the down-thrown side of a major fault. If coal bearing formations exist in the subsurface of the WSA, they have been faulted down to a depth which would preclude their economic development. The potential for economic coal deposits in the Antelope WSA is low.

##### 2. Locatable Minerals

There is no evidence of locatable mineralization in the WSA. There is a reported uranium occurrence just north of the WSA in T. 5 S., R. 2 E., Section 17. The geologic environment in the WSA is not favorable for the occurrence of mineralization and the potential is low.

##### 3. Saleable Minerals

The WSA does not contain mineral materials that would be considered acceptable for the various construction industries. The potential for development of saleable mineral resources is low due to the absence of suitable material and distance to sources of demand.

## B. Livestock Grazing

### 1. Allotments

Parts of two grazing allotments are within the Antelope WSA. The entire area is suitable for livestock grazing. Licensed grazing use on public land includes cattle and a few horses.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Sand Mountain 1285	21,878	1,982	14,090	64%
San Pasqual 1272	13,012	1,860	6,620	51%
TOTAL			20,710	

### 2. Ranch Management

The day-to-day ranch operations in the WSA consist of checking on livestock and forage condition, availability of livestock water, supplementing salt, and routine maintenance on fences and pipelines. Pickup trucks are used for most of the daily ranch operations in the WSA. Because there are no natural water sources in the WSA, livestock waters must be checked frequently to ensure the availability of water.

#### EXISTING RANGELAND DEVELOPMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Type of Development	Location
Sand Mountain 1285	2 3/10 miles pipeline and 2 troughs	T. 6 S., R. 1 E., Sections 24 and 25 T. 6 S., R. 2 E., Section 19
	2 miles pipeline and 1 trough	T. 6 S., R. 2 E., Sections 5 and 6
San Pasqual 1272	2 miles fence	T. 7 S., R. 1 E., Sections 20 and 21
	1/2 mile pipeline and 1 trough	T. 7 S. R. 1 E., Section 21

#### Boundary Fence:

Sand Mountain 1285 and San Pasqual 1272      1 1/2 miles

Note: <sup>a/</sup>Information shown in tables reflect only Federal acres and animal unit months (AUMs), and rangeland developments on public land.

### 3. Potential Rangeland Developments

No additional rangeland developments have been proposed for the WSA at this time.

#### C. Recreation

Existing recreational use of the area is low because of the WSA's general lack of recreational attractions. Dove and quail hunting accounts for most existing use with some vehicular sightseeing occurring along the improved road along the eastern side of the WSA.

#### D. Wildlife

The WSA contains one umbrella type game water facility which was installed to provide water primarily for pronghorn.

#### E. Other

The Antelope WSA is located within the White Sands Missile Range (WSMR) Aerobee 350 Safety Evacuation Zone established by Memorandum of Understanding (MOU) between the U. S. Army and the BLM in 1973. This MOU specifies periodic evacuation of the Safety Zone and right of access to recover objects which impact in the area due to its proximity to targeting locations within the missile range proper.

#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

###### a. Naturalness

The Antelope WSA generally appears natural. However, the quality of naturalness is reduced by human impacts inside and adjacent to the WSA.

Human impacts which negatively impact the quality of naturalness within the WSA consist of rangeland developments and vehicle access routes. There are 7 1/2 miles of vehicle routes, 4 8/10 miles of buried plastic pipeline, 4 drinking troughs, and 3 1/2 miles of barbed wire fence inside the WSA.

Human impacts outside the WSA boundaries also affect the feeling of naturalness in the Antelope WSA because of the lack of topographic or vegetative screening. These impacts include: 1 mile of overhead transmission line cherry-stemmed 1 mile into the southeastern portion of the WSA; a large microwave tower adjacent to the eastern boundary of the WSA; large storage tanks, corrals, and windmill towers in two locations on the eastern boundary of the WSA; and 13 miles of barbed wire fence with orange metal posts along the western boundary of the WSA.

###### b. Solitude

The location of the WSA in an expansive desert environment and the current lack of visitor use in the area compensate for the lack of topographic or vegetative screening and result in opportunities for solitude. Because of the area's lack of topographic or vegetative screening, increases above the current low rates of visitation would diminish opportunities to avoid the sights and sounds of others. The quality of solitude is reduced in the northern and southern part of the WSA by a relatively narrow configuration and the presence of a maintained county road which forms portions of the eastern and southern boundary of the WSA. Traffic along this road, the road which forms 3 miles of the northeastern portion of the WSA, and vehicles used in ranching operations are visible over a wide area of the WSA due to the lack of topographic or vegetative screening in the area.

###### c. Primitive and Unconfined Recreation

Although the WSA offers good dove and quail hunting, opportunities for other types of recreation are limited and opportunities for primitive recreation are not outstanding.

##### 2. Special Features

The WSA provides pronghorn habitat and winter habitat for raptors.





Overview of the Antelope WSA with San Pasqual Mountains in the background.

### 3. Multiple Resource Benefits

Congressional designation of the area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of the multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

### 4. Diversity

#### a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Antelope WSA as being in the Chihuahuan Desert Province. The potential natural vegetation is grama-tobosa shrubsteppe.

## b. Distance From Population Centers

Three cities identified in the 1980 census as Standard Metropolitan Statistical Areas (SMSAs) are located within less than 5 hours driving time of the WSA. Albuquerque, New Mexico lies within 2 hours driving time, Las Cruces, New Mexico lies within 3 hours driving time, and El Paso, Texas within 4 hours driving time of the WSA.

## B. Manageability

Factors which potentially affect the manageability of the Antelope WSA include: land ownership patterns, rangeland developments, the presence of the area in the WSMR Aerobee 350 Safety Evacuation Zone, the lack of natural barriers to existing off-road vehicle use, and the character of the opportunities for solitude in the area.

The WSA contains 680 acres of state inholdings. Reasonable access will be granted by BLM to the owners of these inholdings. This access is not expected to result in significant manageability problems.

The western boundary of the WSA is adjacent to the U. S. Fish and Wildlife Service's Little San Pasqual Wilderness and 5 miles of the eastern boundary of the WSA is formed by the WSMR. This enhances the manageability of the WSA by reducing the possibility of conflicting or nonwilderness uses on lands adjacent to the WSA.

In the southeastern portion of the WSA, private and state lands surrounded on three sides by the WSA contain a large windmill, storage tank, and a large corral. There is also an overhead electric transmission line which has been cherry-stemmed approximately 1 mile into the WSA. While these impacts are not technically inside the WSA, because of the lack of topographic or vegetative screening, they affect the naturalness and opportunities for solitude of the southeastern portion of the WSA.

The WSA contains 4 8/10 miles of buried plastic pipeline. Required access to maintain the pipelines and to ensure that livestock drinking tanks contain water would be allowed under wilderness management. These access needs would affect solitude because of the frequency of required access to check on the availability of livestock water. This would affect large areas in the WSA because of the extreme visibility in this featureless desert grassland.

The WSA lies within the WSMR Aerobee 350 Safety Evacuation Zone that must be periodically evacuated during missile firings. The availability of the Safety Zone is required for an indefinite period of time to support future military programs requiring a test range in excess of that provided by the main WSMR. WSMR requires reasonable access to the Safety Zone to recover missile debris and pilotless drones. However, these access needs are not expected to create serious wilderness management problems because most impacts are the result of drones and they are not normally recovered by the military. The debris, in most cases, could be removed within the constraints of wilderness management. The military's need to periodically evacuate the area for safety reasons would slightly complicate wilderness management.

The open landscape and existing use patterns in the area would make it difficult to eliminate vehicular use under wilderness management. Dove and quail hunters use the vehicle routes throughout the WSA for access during hunting season. Physically closing vehicle routes would not be effective because of the lack of natural barriers to vehicular travel. If signing and public education failed to alter existing use patterns, it would be necessary to fence the WSA to enforce the prohibition of motorized uses.

Managing the WSA to preserve opportunities for solitude would be difficult because the lack of topographic and vegetative screening and the WSA's narrow configuration result in impacts to solitude from activities occurring outside the WSA. These activities, primarily normal traffic along County Road 2113 and increased traffic during hunting season, would reduce opportunities for solitude in the WSA. Increases in the currently low amount of visitation could reduce opportunities to avoid the sights and sounds of others in the area.

While these potential manageability problems are not insurmountable, they would require careful monitoring and a significant amount of management attention to ensure that wilderness values are maintained.

## V. PUBLIC INVOLVEMENT OVERVIEW

The New Mexico Wilderness Study Area Proposals (BLM 1980) recommended 20,710 acres of the Antelope intensive inventory area as a WSA. During the public comment period on this recommendation, comments were received supporting and opposing WSA status of the area.

Sixteen personal letters favored WSA status of Antelope. These letters were of a general nature and supported WSA status because of the area's naturalness, opportunities for solitude and recreation, and supplemental values. Form letters and petitions received during the comment period listed Antelope as one of the areas supported for wilderness review.

Four personal letters opposed WSA status of Antelope. Two of these letters contained specific reasons why the area lacked outstanding opportunities for solitude. Other supporting reasons included: the area did not appear natural, lack of supplemental values, resource conflicts, and lack of manageability.

After a re-evaluation of the Antelope area based on these comments and the area's wilderness characteristics, the BLM released the entire Antelope area from further wilderness review in the New Mexico Wilderness Study Area Decisions (BLM 1980) because it lacked outstanding opportunities for solitude or recreation.

This BLM decision was protested to the BLM New Mexico State Director. The State Director denied the protest and his decision was appealed to the Interior Board of Land Appeals (IBLA).

In reviewing the decision, the IBLA states that the BLM improperly decided not to consider the scenic vistas attributable to the contiguity of the Little San Pasqual Wilderness in determining the opportunities for solitude. The IBLA then reversed the BLM decision denying the protest and remanded Antelope to the BLM as a WSA. As a result of the ruling, Antelope is a WSA and its suitability for wilderness designation is being evaluated in this report.



## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under this alternative, the entire 20,710 acres of public land within the Antelope WSA would be recommended suitable for wilderness designation. (See Map 2 for WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (BLM 1981).

Under the All Wilderness Alternative, the impacts on wilderness values would be significant because of the added protection of Congressional designation. Impacts to air and education/research would be clearly insignificant; therefore, they were not included in the following discussions.

#### 1. Impacts to Minerals

There are no known occurrences of mineral resources in the WSA and the potential for the discovery of such deposits is low. For these reasons, wilderness designation would not significantly impact mineral development.

#### 2. Impacts to Other Resources and Uses

##### a. Water, Soils, Vegetation

Under wilderness management, motorized access would be limited to the grazing permittee through restrictions on existing vehicle routes. Vehicular access would be authorized only if there were no practical alternatives. By reducing vehicular use along these existing ways and preventing surface disturbance in the remainder of the WSA, wilderness management would preserve vegetative ground cover and reduce the potential for soil erosion.

Habitat suitable for the occurrence of three plant species listed as special concern elements by the New Mexico State Heritage Program (see Chapter II, Vegetation) would be preserved.

##### b. Wildlife

Short-term impacts of wilderness designation on wildlife would result primarily from the elimination of vehicular access into the area. This could reduce harassment, poaching, and hunting of game species.

In the long-term, wilderness management would serve to protect and maintain the existing natural values including the natural distribution and abundance of wildlife species in the WSA. Wilderness management would not result in significant alterations of existing habitat conditions in the WSA. For this reason, impacts of wilderness designation on wildlife in the WSA would not be significant.

c. Visual

Existing visual qualities would be preserved. The area would be managed as a VRM Class I which allows minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity.

d. Livestock Grazing

Grazing is a permissible and compatible activity in wilderness and would continue at grandfathered levels subject to sound rangeland management. Wilderness designation would have an impact on grazing use by narrowing the range of management options available to permittees and the BLM. Construction of new rangeland developments, including water sources and fences in the WSA, would be restricted under wilderness management to those which primarily benefit the natural rangeland values of the wilderness resource. Natural materials (wood fenceposts, natural rock, etc.) would be preferred for the replacement or maintenance of existing rangeland developments. Authorization for vehicular access or for the use of mechanized equipment to maintain grandfathered rangeland developments would be given only if there were no practical alternatives and would be on a permit basis.

An unauthorized livestock corral in T. 7 S., R. 1 E., Section 21 would be physically removed.

e. Recreation

Wilderness designation would limit the access of dove and quail hunters by closing 7 1/2 miles of vehicle routes. Roads along the boundary of the WSA as well as the road along the powerline which is cherry-stemmed 1 mile into the WSA would remain open. These access points and configuration of the WSA would allow hunters to walk to most areas in the WSA.

f. Cultural

Closing the WSA to vehicular travel and prohibiting significant surface disturbance would provide long-term protection for archaeological sites.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the Antelope WSA with significant long-term protection. This would not significantly impact the adjacent Little San Pasqual Wilderness. Because the U.S. Fish and Wildlife Service does not allow grazing on the Little San Pasqual, the existing fence would remain in place, and the Antelope WSA and the Little San Pasqual Wilderness would remain distinct areas with different management policies.

h. Other

Wilderness designation would restrict but not preclude entry by WSMR personnel to recover unmanned drones or missile debris in the

Aerobee 350 Safety Evacuation Zone which could impact in the area. Reasonable access would be granted after determining the method that would least impact wilderness values.

## B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 20,710 acres of public land within the Antelope WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III. The most probable use of the area would be continued livestock grazing.

Under the No Action/No Wilderness Alternative, the impacts to air, cultural resources, education/research, wildlife, and vehicle dependent recreation would be clearly insignificant; therefore, they were not included in the following discussions.

### 1. Impacts to Wilderness Values

The wilderness values and special features of the Antelope WSA would not be provided with long-term Congressional protection. Since existing and proposed BLM plans do not identify any activities which would significantly impact natural values, the area would retain its generally natural character in the short-term. Opportunities for solitude would be impacted by continued vehicular access for ranch operations and by use during hunting season.

The Antelope WSA's location in an expansive desert environment and sweeping vistas of surrounding landscapes are important contributors to the feeling of naturalness and solitude inside the WSA. Under this alternative, these circumstances would not change and therefore, would not significantly impact wilderness values.

In the long-term, rangeland management activities and continued vehicular access could impact the naturalness of the WSA through the creation of additional rangeland developments and access routes. These impacts would not significantly alter the existing situation in the WSA nor would they impact the adjacent Little San Pasqual Wilderness.

### 2. Impacts to Other Resources and Uses

#### a. Water, Soils, Vegetation

Vehicle routes in the WSA would remain open to motorized access. Surface disturbing activities would be allowed subject to environmental analysis.

The impacts to water, soils, and vegetation including three plant species listed as special concern elements by the New Mexico State Heritage Program would not be significant.

b. Visual

Although significant changes in the basic elements of the landscape as a result of management actions could be permitted under the existing VRM Class IV designation, existing and proposed BLM plans do not identify any activities which would impair visual resources. Impacts to visual resources in the long-term would not be significant.

c. Minerals

There would be no impacts to mineral resources under this alternative.

d. Livestock Grazing

There would be no impacts on livestock grazing under this alternative.

e. Other

There would be no impacts to the WSMR Aerobee 350 Safety Evacuation Zone.



## VII. RECOMMENDED ACTION

### A. Recommended Action Description

The recommended action for the Antelope WSA is the No Action/No Wilderness Alternative. The entire 20,710-acre WSA is recommended nonsuitable for wilderness designation.

### B. Rationale

The quality of the Antelope WSA's wilderness values is the primary reason for recommending the area nonsuitable for wilderness designation. Secondary factors which support this recommendation include manageability problems and resource conflicts.

Although the Antelope WSA generally appears natural, the quality of its naturalness is negatively impacted by vehicle trails, rangeland developments, and a cherry-stemmed powerline.

As discussed in Chapter V, Public Involvement Overview, the BLM released the Antelope WSA from further wilderness review in 1980 because the area lacked outstanding opportunities for solitude or outdoor recreation. After reviewing the case, the IBLA ruled that the BLM improperly evaluated opportunities for solitude in the intensive inventory of Antelope and directed the BLM to designate the area a WSA.

During the wilderness study, the quality of opportunities for solitude and outdoor recreation in the Antelope WSA were considered. The BLM concluded that the WSA's location in an expansive desert environment and the current lack of visitor use compensates for the area's lack of topographic or vegetative screening in providing opportunities for solitude.

The quality of opportunities for solitude, however, is diminished by the WSA's narrow configuration, lack of topographic or vegetative screening, and the presence of maintained roads which form portions of the WSA's boundaries. Because of the area's openness, any increases in visitation above the current low rates would diminish the existing opportunities to avoid the sights and sounds of others.

Opportunities for outdoor recreation are not outstanding in the WSA.

Secondary factors which support recommending the WSA nonsuitable for wilderness designation are manageability problems and resource conflicts. These factors include existing vehicular uses of the WSA, the lack of barriers to ORV travel and the fragile nature of the area's opportunities for solitude.

### C. Consistency With Other Plans

The recommended action for the Antelope WSA does not conflict with any decisions in the East Socorro Grazing Environmental Impact Statement (BLM 1979) or the Stallion Management Framework Plan (BLM 1975).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Las Cruces District Wilderness Supplemental Draft Environmental Assessment.

## APPENDIX C

### PRESILLA WSA (NM-020-037)

#### I. GENERAL DESCRIPTION

##### A. Location

The Presilla Wilderness Study Area (WSA) is located east of the Rio Grande, about 2 miles east of Socorro, New Mexico.

The U.S. Geological Survey (USGS) topographic map covering the WSA is the Loma de las Canas, New Mexico quadrangle at the 7 1/2-minute scale.

##### B. Climate and Topography

The Presilla WSA is characterized by a semiarid climate with clear and sunny days, large diurnal temperature ranges, low humidity, and scant rainfall.

The WSA is located within the Chihuahuan Desert. Maximum summer temperatures range from 90° to 100°F. Winter temperatures are generally mild during daylight hours, 40° to 50°F, and moderately cold at night, 15° to 30°F. Spring and fall temperatures tend to be mild. The spring season typically is accompanied by winds ranging from 10 to 40 mph.

Precipitation averages 10 inches per year. Over half the annual rainfall is received during the summer thundershower season (July through September). A third of the year's precipitation usually falls during the winter months (December through March). The remaining moisture, normally 10 percent or less, is received in the spring and fall months.

The western portion of the WSA contains mesa benchlands cut by large arroyos, while the eastern portion is dominated by rugged limestone and sandstone hills which, in places, form parallel ridges trending north-south. Low granitic ridges rise slightly above the surrounding terrain in T. 3 S., R. 1 E., Sections 11 and 14. There are also areas of coppice dunes and scenic box canyons. Elevation varies from 4,700 feet to 5,450 feet. Drainages include portions of Arroyo del Tajo, Arroyo de la Presilla, Arroyo de Tio Bartolo, and Arroyo Tinajas.

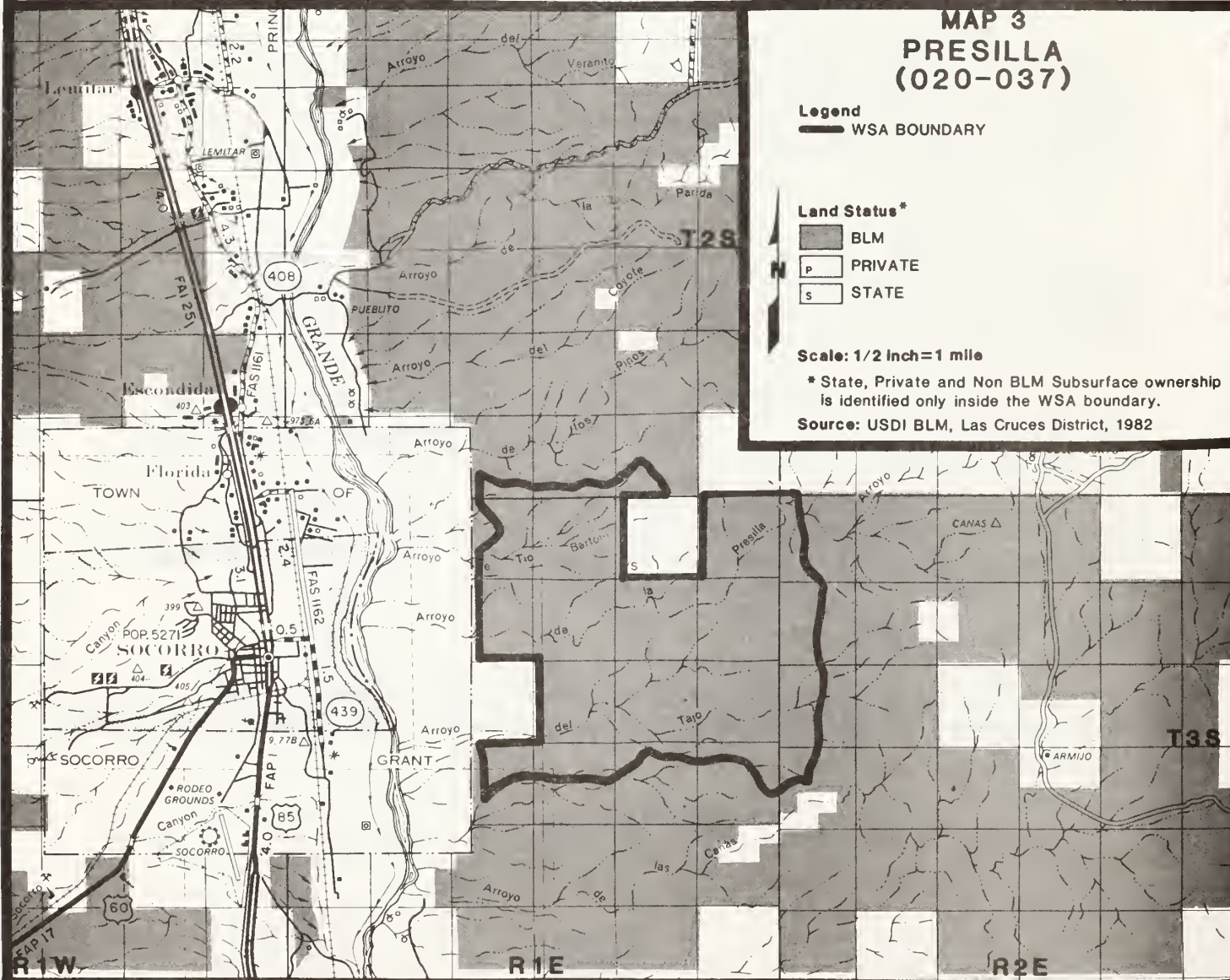
##### C. Land Status

The WSA contains approximately 8,680 acres of public land. There are no state or private inholdings. (See Map 3 for land status within the WSA boundary.)





Overview of the Arroyo del Tajo.





D. Access

The Presilla WSA has excellent physical and legal access. The Quebradas road forms the eastern boundary of the WSA and the Wilson Hill road parallels the western boundary of the WSA. Roads also form the northern and southern boundaries of the WSA. In addition to these boundary roads, there are vehicle routes running throughout the WSA.

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## II. EXISTING RESOURCES

### A. Geology

The Presilla WSA is situated within the Basin and Range Physiographic Province. Specifically, it is located in the Socorro trough, a faulted, tectonic depression filled with unconsolidated sediments. The WSA is also situated within the Rio Grande Rift, a tensional feature in the earth's crust, which extends from southern Colorado to the El Paso, Texas vicinity. Records of past earthquakes and pediment surfaces offset by fault scarps indicate that tectonic forces are still active within the Rift. The City of Socorro vicinity is especially seismically active.

The western portion of the WSA contains late Tertiary valley-fill sediments of the Santa Fe formation and Quaternary alluvium. The eastern portion of the WSA contains outcrops of Pennsylvanian age Madera limestone on several exposures of Precambrian granite.

### B. Water

The Presilla WSA is located within the Rio Grande Basin. Surface water drainage is integrated with the Rio Grande by means of a system of ephemeral arroyos. Surface flows occur immediately after rainfall, usually as a result of summer thundershowers. Flow periods are short and may be widely spaced in time due to sporadic rainfall patterns. Major drainages in the WSA include portions of Arroyo de la Presilla, Arroyo Tinajas, and Arroyo del Tajo.

Portions of four watersheds are within the Presilla WSA. In general, the area is classified in the slight sediment yield class and in the moderate erosion class. Sheet and gully erosion occur following summer thundershowers and all four watersheds contribute some sediment to the Rio Grande.

Major underground aquifers in the WSA are Pennsylvanian age Madera limestone, Tertiary age Santa Fe formation, and Quaternary age alluvium. Water quality was analyzed from Pueblito Well which is on the southern boundary of the WSA, and is considered representative of the WSA. The analysis indicates a high dissolved solids content due to mineralization. Ground water quality is within the recommended limits for livestock and wildlife use.

### C. Soils

Gravelly soils on steep slopes cover most of the WSA. Limestone rock outcrop and some basalt is common on steep slopes. Soil depths range from shallow to deep and textures are predominantly gravelly to extremely gravelly sandy loams and loams. All of the soils in the WSA are calcareous in the substratum and some have an indurated caliche layer. There is a small area of deep sandy soils on the gentler slopes between Arroyo del Tajo and Arroyo de la Presilla along the western boundary.

## D. Vegetation

### 1. General

The vegetation and associated range sites within the Presilla WSA consist of three major types:

Vegetation Type	Range Site	Federal Acres
Creosote	Gravelly, Limestone hills, Igneous hills	7,403
Desert shrub	Sandy	1,261
Pinyon-juniper	Limestone hills	16

The creosote type is the most prevalent in the WSA and contains other shrubs such as snakeweed, Mormon tea, and mesquite. Common grasses include fluffgrass, black grama, threeawns, dropseeds, bush muhly, and galleta. Annuals are an important part of this type and include annual snakeweed, common bahia, buckwheats, spectaclepod, sixweeks grama, sixweeks threeawn, and windmill grass.

The desert shrub type in the WSA is dominated by broom dalea and occurs on coppice dunes and deep sandy soil. Other shrubs are mesquite, snakeweed, sand sage, littleleaf sumac, and winterfat. Common grasses include fluffgrass and dropseeds.

Pinyon-juniper is found on a small area in the southeast part of the WSA, with one-seed juniper being the most common tree. Shrubs include snakeweed, rabbitbrush, squawbush, brickelbush, and Apacheplume. The common grasses are fluffgrass and slim tridens.

### 2. Threatened or Endangered Plant Species

Spellenberg (1977) and the New Mexico State Heritage Program (1983) do not list any threatened, endangered, or state-listed plant species in the WSA. The following species have been encountered near the area and probably occur within the WSA:

Species: Cryptantha paysonii

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Nearly level limestone shelves and ridgetops.

Species: Thelypodopsis purpusii

Status: Selected by the New Mexico State Heritage Program as a special concern element.

Habitat: Canyons and arroyo bottoms.

## E. Wildlife

The WSA supports approximately 213 wildlife species including 27 mammals, 41 reptile and amphibian species, and 145 resident and migratory bird species. Great horned owls have been observed roosting in canyon walls in Arroyo del Tajo. Other raptors, including red-tailed hawks, prairie falcons, and Cooper's hawks, populate the area. Doves, scaled quail, and various songbirds can also be seen. Tinajas (natural sinkholes in the dry arroyo bottoms) provide water on an intermittent basis, thus creating important microhabitats which attract and concentrate many species. Arroyos with abundant shrubs offer good habitat conditions for wildlife. Mammals which can be found in this locale include woodrats, jackrabbits, rock squirrels, gray fox, and deer. Rattlesnakes, side blotched and collared lizards, and coachwhip snakes are also present.

The Presilla WSA contains two major Standard Habitat Sites (SHS's). These SHS's are described briefly below.

### 1. Creosote Hill

The principal areas in the creosote hill SHS are the rolling upland hills east of the Rio Grande. Ground cover is sparse where creosote occurs in thick stands. This area has many arroyos that run toward the river. The arroyo bottoms have thick stands of Apacheplume and littleleaf sumac with creosote on the south-facing slopes and black grama on the north-facing sides. Some of the arroyos are several hundred meters across. The most diversity in plants and animals occurs in the arroyo bottoms, with little species diversity between the arroyos where creosote is the dominant plant. The most common wildlife species within this SHS are coyotes, black-tailed jackrabbits, and desert cottontails.

### 2. Mesquite Rolling Upland

The mesquite rolling upland SHS is a narrow band of vegetation that begins at the foothills heading east from the Rio Grande. It divides the riparian vegetation along the river from the creosote hills. It provides good cover for many species. This area is often very hot in the summer, lacking the breezes found in the hills and the humidity from the river. Ground cover is sparse and erosion is quite evident as some of the mesquite clumps are several feet higher than the surface in between. The most common wildlife species within this SHS are coyotes, black-tailed jackrabbits, desert cottontails, a few mule deer, and various songbirds.

## F. Visual

The Presilla WSA is characterized by rolling benchlands which rise above the Rio Grande floodplain in the west and rugged north-south trending ridges of alternating bands of red sandstone and white limestone in the eastern portion of the area. These landforms have been cut by numerous drainages, producing a diverse visual landscape. The Arroyo del Tajo, Arroyo de Tio Bartolo, and Presilla Boxes are localized areas of outstanding visual quality characterized by various erosional features, including water-sculpted limestone and granite walls.



High points in the WSA offer vistas of the Rio Grande Valley and the Magdalena Mountains to the west and the Sierra de las Canas to the east. The visual qualities of the WSA are given added significance by their location. Rising above the eastern bank of the Rio Grande, the WSA is an important component in the visual landscape of the City of Socorro and for travelers along U.S. Highway 60 and Interstate 25.

The entire WSA is within a Visual Resource Management Class IV area.



West end of the Arroyo del Tajo Box.

#### G. Cultural

The WSA contains seven known cultural sites ranging from small structures of unknown function and date, an archaic lithic scatter, and a quarry, to a unique pictograph site relating to a Piro ceremonial site.

Previous BLM and private work in the area indicate that more than 1 mile from the river, the site density falls off, and those sites that do exist are usually associated with water sources or sand dunes.

A site of major significance in the WSA is the Arroyo del Tajo pictographs. They consist of over 75 figures painted in a shallow rock shelter on the north side of the arroyo. The figures represent a series of events by using various pueblo religious figures and symbols. They were most likely painted by Piro Indians, a group that inhabited over 20 settlements along the Rio Grande before their abandonment after the Pueblo Revolt of 1680. A pictograph site representing a series of events is virtually unique in the Southwest.

#### H. Air

The quality of air within the Presilla WSA is generally good. The air quality in the WSA does not exceed state or Federal air quality standards and is classified as a Class II area. This classification allows a moderate amount of degradation of air quality.

The only major degradation of air quality occurs during the spring months (March-May) when west-prevailing winds, commonly gusting in excess of 30 mph, result in dust storms.

### III. EXISTING AND POTENTIAL USES

#### A. Mineral Development

##### 1. Energy Minerals

###### a. Oil and Gas

No exploration activities have occurred in the WSA. The nearest oil and gas test wells are north of the WSA in T. 1 S., R. 1 E., Sections 13 and 26. The wells were abandoned at depths of 800 and 860 feet with no reported shows of oil or gas.

The potential for discovery of oil and gas in the WSA is low. Heat and faulting associated with the Rio Grande Rift have probably prevented the accumulation and entrapment of petroleum. A special stipulation is attached to 200 acres in T. 3 S., R. 1 E., Section 14 to protect the cultural values in the Tinajas Natural Area.

###### b. Geothermal

In the City of Socorro area, the presence of hot springs, high heat flow, steep geothermal gradients, and geophysical evidence of shallow magma chambers indicate that a heat source underlies the area. This heat source may extend eastward under the WSA. The potential for the occurrence of a low temperature heat source which could provide heat for direct-use applications is moderate.

###### c. Uranium

Uranium mineralization occurs in veins and fractures in granite outcrops in the eastern portion of the WSA. Higher than normal radioactivity and anomalous geochemical values also occur in the granite. Geochemical uranium values are 5 to 200 times the value for normal granite, while radioactivity is 3 to 24 times normal background radiation. The potential for discovery of a uranium ore deposit is moderate.

##### 2. Nonenergy Minerals

###### a. Locatable Minerals

###### (1) Fluorspar, Barite, Lead, Zinc

There are two known fluorspar deposits in or near the WSA: the Gonzales prospect in T. 3 S., R. 1 E., Section 2 and the La Bonita prospect in T. 3 S., R. 1 E., Section 12. Fluorspar and barite with minor amounts of lead and zinc occur along faults and fractures in Precambrian granite and the Madera limestone. These deposits are small and appear to have low to moderate potential for discovery of economic deposits.

###### (2) Copper

Copper mineralization occurs about 1 1/2 miles north of the WSA in T. 2 S., R. 1 E., Section 26 at Minas del Chupadero. The

mineralization occurs as irregular stratabound deposits in sandstones in the Pennsylvanian Moya formation. Deposits of this type could extend into the extreme eastern portion of the WSA, although the potential appears to be low.

## b. Saleable Minerals

### (1) Sand and Gravel

Sand and gravel occur in the Santa Fe formation and in Quaternary alluvium within the western portion of the WSA. The WSA has moderate favorability for the development of these resources.

### (2) Building Stone/Aggregate

The eastern portion of the WSA contains limestone that has a low to moderate potential for use in various construction projects.

## B. Livestock Grazing

### 1. Allotments

All of one and portions of four grazing allotments are within the boundary of the WSA. Licensed grazing use on public land includes cattle and a few horses.

#### ALLOTMENTS WITHIN THE WSA<sup>a/</sup>

Allotment Name and Number	Total Acres	Total AUMs	Acres in WSA	Percent Allotment
Tio Bartolo 1258	4,806	365	4,806	100%
Four Hills 1259	6,132	360	406	7%
Las Canas 1262	12,312	1,560	941	8%
Rio Grande 1288	4,405	315	916	21%
Arroyo del Tajo 1287	4,320	264	1,611	37%
TOTAL			8,680	

Note: <sup>a/</sup>Information shown in table reflects only Federal acres and animal unit months (AUMs).

### 2. Ranch Management

A 1/4 mile of interior fence on the Four Hills allotment (1259) and the following boundary fences are the only rangeland developments on public land located within the WSA.

#### Boundary Fences:

Four Hills (1259) and Tio Bartolo (1258)	2 6/10 miles
Tio Bartolo (1258) and Las Canas (1262)	1/10 mile
Tio Bartolo (1258) and Arroyo del Tajo (1287)	2/10 mile
Tio Bartolo (1258) and Rio Grande (1288)	1 7/10 miles
Arroyo del Tajo (1287) and Las Canas (1262)	2 3/10 miles
Arroyo del Tajo (1287) and Rio Grande (1288)	4/10 mile



Vehicle routes in the WSA are used by permittees to check the condition of livestock and to deliver salt and minerals to livestock. There are no rangeland developments in the WSA which require motorized access for maintenance.

### C. Recreation

The Presilla WSA lies 2 miles east of the City of Socorro and has excellent public access. This excellent access and the presence of interesting landforms including sand dunes, colorful arroyos, and scenic box canyons have resulted in a high level of recreational use relative to other public land in the vicinity of Socorro. Traditional uses in the area include deer and quail hunting, off-road vehicle (ORV) use along the arroyos and vehicle routes, rock collecting, hiking, camping, and rock climbing. The major north-south vehicle route through the WSA is designated as open to ORV use. The remainder of the WSA is closed to ORV use. Despite this designation, ORV use occurs along the larger arroyos and on other vehicle routes.

Publicity resulting from the BLM's designation of the Tinajas Area of Environmental Concern and interpretation at the Arroyo del Tajo pictograph site has resulted in increased public awareness and use, especially archaeological sightseeing in the Arroyo del Tajo area.

The recreational potential of Presilla as a day use area is high because of natural and cultural resources, proximity to the City of Socorro, and excellent public access.

### D. Education/Research

The WSA has been utilized by the New Mexico Institute of Mining and Technology for geologic studies, research purposes, and for organized recreational outings. The potential for future educational and research uses in the WSA is high due to its proximity to the City of Socorro and the archaeological and natural resources of the area.

### E. Cultural

In May 1981, the 1,280 acres surrounding the Arroyo del Tajo pictographs were designated an ACEC under the name Tinajas Natural Area. A short trail leads visitors to a register and the pictograph site.

#### IV. WILDERNESS CRITERIA

##### A. Evaluation of Wilderness Values

##### 1. Quality of Mandatory Wilderness Characteristics

##### a. Naturalness

Pre-Federal Land Policy and Management Act (FLPMA) and post-FLPMA impacts affect the quality of the naturalness of the Presilla WSA. These impacts are discussed separately.

Pre-FLPMA impacts on the WSA's naturalness include 5 miles of once bladed vehicle routes, approximately 10 miles of barbed wire fence, 8 mineral prospecting pits, and 2 mine shafts.

The vehicle routes through the area are the most noticeable impact on naturalness. The route along the Arroyo Tinajas and south into the center of the WSA is evident from vantage points on the western half of the area. The routes are most noticeable where they cross hillsides or the sides of the larger arroyos.

The mineral prospecting pits are all located in T. 2 S., R. 1 E., Sections 34 and 35. This concentration reduces the apparent naturalness of this portion of the WSA. The mine shafts are located near Arroyo Tinajas. The cumulative impact of vehicle routes, prospect pits, and mine shafts reduces the apparent naturalness of the central and northern portions of the WSA.

Human activities outside the WSA have a slight impact on the apparent naturalness of portions of the WSA. An old fluorspar mine and associated structures and dumps are located in T. 3 S., R. 1 E., Section 2. This section is almost surrounded by the WSA. The mine and associated development are visible from portions of the WSA. A large windmill and storage tank are located on a high ridge adjacent to the southern boundary of the WSA. The windmill is visible from most points in the central and southern portions of the WSA. The inactive mine and the windmill detract slightly from the apparent naturalness of portions of the WSA.

The eastern and western portions of the WSA generally appear natural. The impacted central and northern portions of the WSA cannot be separated from the WSA to improve the overall naturalness of the area. Although portions of the WSA appear natural, the developments in the central portion of the WSA reduce the overall naturalness of the WSA.

Post-FLPMA impacts on the WSA's naturalness include approximately 5 miles of access roads and 2 drill pads constructed in 1978 and 1979. Over 2 miles of these roads were originally constructed prior to the passage of FLPMA. However, they were not maintained after construction, although maintenance was needed, and thus failed to meet the definition of a road during wilderness inventory. The roads and drill pads are located in the center of the WSA and greatly reduce the naturalness of the WSA's core.

While portions of the WSA are natural, mining activity and vehicle routes have impacted the overall quality of the naturalness of the Presilla WSA.

b. Solitude

The Presilla WSA contains numerous large east-west trending arroyos. The extensive, convoluted drainage systems and the resulting topographic screening offer visitors secluded areas and result in good opportunities for solitude. Opportunities for solitude are slightly reduced in Arroyo del Tajo because the scenic quality, geologic features, pictographs, and ease of access tend to concentrate visitors in this area.

The feeling of solitude is impacted slightly in the Arroyo del Tajo area by a large windmill and storage tank which are located on a ridge overlooking the pictograph site.

c. Primitive and Unconfined Recreation

The Presilla WSA contains a variety of landforms which provide visual interest, including colorful arroyos with interesting erosional features such as narrow water-sculpted limestone and granite boxes, sand dunes, and steep ridges. The WSA also contains an interpretive site based on significant Piro Indian pictographs.

The natural and cultural features of the WSA provide outstanding opportunities for day hiking, backpacking, camping, photography, various types of sightseeing, and nature studies.

2. Special Features

The Presilla WSA contains the Arroyo del Tajo pictograph site which consists of more than 75 figures representing Piro Pueblo religious figures and symbols. The pictograph site, representing a series of events, is virtually unique in the Southwest. Arroyo del Tajo, Arroyo Tinajas, and Arroyo de Tio Bartolo also contain erosional features which are highly scenic. The value of these supplemental qualities is enhanced by their proximity to the City of Socorro and relative ease of access.

3. Multiple Resource Benefits

Congressional designation of this area as wilderness would provide a greater degree of long-term protection for the area's wilderness values than would administrative designations available to the BLM.

A more detailed discussion of the multiple resource benefits of wilderness designation is located in Chapter VI, Impacts, under the All Wilderness Alternative.

4. Diversity

a. Ecosystems Present

The Bailey (1976) - Kuchler (1966) System classifies the Presilla WSA as being within the Chihuahuan Desert Province. The potential natural vegetation is grama-tobosa shrubsteppe.

b. Distance from Population Centers

Three cities identified in the 1980 census as Standard Metropolitan Statistical Areas (SMSAs) are located less than 5 hours driving time of the WSA. Albuquerque, New Mexico lies within 2 hours, Las Cruces New Mexico within 3 hours, and El Paso, Texas within 4 hours driving time of the WSA.

B. Manageability

Both positive and negative factors affect the potential of the Presilla WSA to be managed as wilderness. These include existing access, visibility of boundaries, concentration of visitor use, special features, and the area's existing naturalness.

Positive factors influencing the manageability of the WSA include existing access and the visibility of boundaries. Visitors can enter the area from almost any point and thus tend to disperse themselves throughout the area. Visitors may enter and leave the WSA without leaving land administered by the BLM.

On-the-ground management of the WSA would be enhanced by the visibility of its boundaries. Most of the boundaries are along maintained roads. The boundaries are easy to identify and would reduce conflicts from unauthorized uses or unintentional trespass.

There is a potential for concentrated visitor use in the Arroyo del Tajo box because of the ease of access and the area's special features. Concentration of use in the Arroyo del Tajo could diminish the ability to manage this small portion of the area for outstanding solitude.

A significant issue concerning the manageability of Presilla as wilderness is the area's existing quality of naturalness and the potential for rehabilitating the post-FLPMA roads in the area. Rehabilitation would require hauling in soil to recontour some of the road cuts across slopes, knocking down the road berms, and reseeding the disturbed area with native species. These measures could reduce the impact of the roads on the area's apparent naturalness. With adequate rainfall and rehabilitation measures, the roads could become less noticeable in the long-term. However, these rehabilitation measures offer poor potential in returning the WSA to a natural state.

Because of the WSA's existing low quality naturalness and poor potential for returning the area to a substantially natural state, the BLM could not manage the area to provide wilderness values.



## V. PUBLIC INVOLVEMENT OVERVIEW

The New Mexico Wilderness Study Area Proposals (BLM 1980) deferred a decision on the Presilla's suitability as a WSA to allow the BLM time to evaluate the rehabilitation potential of the area's post-FLPMA mining developments. During public review of the proposal to defer a decision, public comments were received in the form of personal letters, form letters, and petitions.

Eleven personal letters favored wilderness review of the Presilla. Supporting reasons included size, naturalness, opportunities for solitude and recreation, and supplemental values. Form letters and petitions received during the comment period listed Presilla as one of the areas supported for further wilderness review.

Four personal letters opposed further wilderness review of Presilla. Supporting reasons included mining and range impacts, the lack of opportunities for solitude, and potential resource conflicts.

After a re-evaluation of Presilla's wilderness characteristics based on these public comments, impacts to the area's naturalness, and the potential for rehabilitation of the post-FLPMA developments, the BLM released the entire Presilla area from further wilderness review in the New Mexico Wilderness Study Area Decisions (BLM 1980).

The BLM decision to release the entire Presilla area from further wilderness review was protested to the New Mexico BLM State Director. The State Director denied the protest and his decision was appealed to the Interior Board of Land Appeals (IBLA).

After reviewing the case, the IBLA quoted the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1979) which states, "...impacts resulting from unauthorized activities will not disqualify an area from WSA status." IBLA then reversed the BLM decision denying the protest and remanded Presilla to the BLM as a WSA. As a result of this ruling, Presilla is a WSA and its suitability for wilderness designation is being evaluated in this report.

## VI. ALTERNATIVES AND IMPACTS

### A. All Wilderness

Under the All Wilderness Alternative, the entire 8,680 acres of public land within the Presilla WSA would be recommended suitable for wilderness designation. (See Map 3 for the WSA boundary.)

If designated wilderness, the existing uses and activities in the area and the potential uses identified in BLM planning documents (see Chapter III) would be managed under the constraints of the Wilderness Management Policy (BLM 1981).

Under the All Wilderness Alternative, the impacts on wilderness values would be significant because of the added protection of Congressional designation. Impacts on air quality and education/research are clearly insignificant; therefore, they were not included in the following discussions.

#### 1. Impacts to Minerals

The potential for the discovery of oil and gas in the WSA is low. Therefore, wilderness designation would have minimal impacts to the oil and gas industry.

The potential for the occurrence of geothermal resources is moderate. Denying geothermal exploration and leasing could prevent the discovery and development of low-temperature, direct-use geothermal application. Because of the moderate to high potential for geothermal resources in a large area surrounding the City of Socorro, wilderness designation of the Presilla WSA would not result in significant impacts to geothermal resources.

Low to moderate potential exists for the discovery of uranium, fluorspar, barite, lead, zinc, and copper. Valid claims located before wilderness designation could be developed to their full potential. However, during development, mining claimants could incur additional costs of operation depending on the type of environmental restrictions.

It is assumed that no new exploration or location of mining claims would be allowed after wilderness designation. Mineral trends could not be followed outside of existing valid claim boundaries. Although there would not be an opportunity to fully assess the area's mineral potential, wilderness designation would not have significant impacts on locatable minerals due to low to moderate potential.

The WSA contains deposits of sand and gravel and building stone. However, deposits of such materials are widespread in the surrounding areas. Denying material sales within the WSA would have negligible impacts on the availability of these materials.

## 2. Impacts to Other Resources and Uses

### a. Water, Soils, Vegetation

Under wilderness management, motorized access on existing vehicle trails in the WSA would not be allowed. The 5 miles of bladed post-FLPMA mining access routes in the central portion of the WSA could be closed and rehabilitated, which could result in a slight increase in vegetative ground cover. This could also reduce the potential for accelerated erosion along these vehicle routes.

Although the restrictions of wilderness management on surface disturbing and mechanized activities would provide long-term protection for the existing water, soils, and vegetation, including the habitat of two plants identified by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation), the impacts would not be significant.

### b. Wildlife

Under wilderness management, wildlife habitat would be protected from destruction and wildlife from disturbance as a result of restrictions on surface disturbing and mechanized activities. Restricted vehicular access could lessen the potential for harassment and poaching of wildlife and reduce hunting pressure in the area.

Since existing and proposed BLM plans do not identify any potential uses or activities that could result in extensive surface disturbance, the additional protection for wildlife provided by wilderness designation would not be significant.

### c. Visual

Existing visual resources would be protected since the area would be managed as a Visual Resource Management (VRM) Class I. Only minor modifications in the basic elements of the landscape as a result of natural ecological changes and very limited management activity would be permitted.

Wilderness designation could result in partial rehabilitation of the post-FLPMA mining roads. This could result in a slight improvement in the visual quality of the central portion of the WSA which is most heavily impacted.

### d. Cultural

Wilderness designation would provide additional long-term protection for the Arroyo del Tajo pictograph sites as well as other cultural resources in the WSA.

In the Tinajas ACEC, there is low profile on-site interpretation of the pictographs through signs. Since the Wilderness Management Policy would not normally allow interpretation activities, the existing signs and visitor register would be relocated.

e. Livestock Grazing

Livestock grazing is permissible and compatible with wilderness. Wilderness designation would have an impact on grazing use by narrowing the range of management options available to permittees and the BLM. Generally, motorized access within the designated wilderness would not be permitted. Because there are no water developments or other rangeland improvements in the WSA which require regular maintenance, there would be no significant impacts to existing livestock operations. The relatively small size of the WSA and existing access patterns along the periphery of the WSA would make it relatively easy to inspect and maintain fences by horseback.

f. Recreation

Vehicle dependent recreational uses would be prohibited. This would result in insignificant impacts because ORV use or vehicle dependent recreation is low in the WSA and there are numerous other areas available for ORV use within the region.

Much of the recreational use in the WSA is associated with the pictographs in Arroyo del Tajo. This use would not be impacted by wilderness designation because the access road and trailhead which serve the site are outside the WSA boundaries. Wilderness designation would result in relocation of the visitor register and interpretive signs from the pictograph site to the trailhead which is outside the WSA.

Increased visitation in the Arroyo del Tajo could reduce the opportunities for solitude in the immediate area.

g. Wilderness Values

Wilderness designation would provide the wilderness values present in the Presilla WSA with significant long-term Congressional protection.

Wilderness designation would enhance Presilla's wilderness characteristics because it could result in a greater amount of rehabilitation on the post-FLPMA roads. Although the roads have poor potential for rehabilitation, in the long-term the roads could become less noticeable in the context of the entire WSA.

B. No Action/No Wilderness

Under the No Action/No Wilderness Alternative, the entire 8,680 acres of public land in the Presilla WSA would be recommended nonsuitable for wilderness designation.

If the WSA is not designated wilderness, existing uses would continue and potential uses could be carried out as described in Chapter III.

The most probable uses of the area, if it is not designated wilderness, would be continued livestock grazing and recreation. Mining claims could be located in the area. Future market conditions could result in mineral development in the area, although based on the mineral potential of the area, this appears unlikely.



In the long-term, existing wilderness values could be significantly impacted because they would not receive Congressional protection. Impacts on air quality, wildlife, and education/research are clearly insignificant; therefore, they were not included in the following discussions.

## 1. Impacts to Wilderness Values

The wilderness values and special features of the Presilla WSA would not be provided with long-term Congressional protection. Management of the area as specified in existing land-use plans would be subject to administrative change in the long-term. Construction of additional vehicle routes and surface disturbance associated with mining claims assessment work could impact wilderness values in the long-term. Unrestricted recreation use could result in visitor concentrations which would reduce opportunities for solitude and degrade the quality of primitive recreation opportunities.

## 2. Impacts to Other Resources and Uses

### a. Water, Soils, Vegetation

The vehicle routes in the WSA would remain open to motorized access. The impacts to water, soils, and vegetation, including the plants identified by the New Mexico State Heritage Program as special concern elements (see Chapter II, Vegetation), would not be significant.

### b. Recreation

Present use patterns would continue with use concentrated primarily along the larger arroyos. There would be no significant impacts on recreational use at Arroyo del Tajo because the existing ACEC would prevent conflicting uses on surrounding lands.

### c. Visual

Under this alternative, the entire area would be managed as a VRM Class IV, which permits significant change in the basic elements of the landscape as a result of management actions. Surface disturbance associated with mining claim assessment work and construction of additional vehicle routes could impact the visual quality of the area in the long-term.

### d. Cultural

Cultural resources in the WSA would not have the additional protection afforded by wilderness designation, but existing laws and regulations would prevent significant impacts.

### e. Mineral

Energy minerals leasing would continue. Vehicle use in connection with exploration activities would be restricted to existing roads and trails. Any energy minerals drilling, development, or production activities on the 200 acres surrounding the pictographs in the Tinajas Natural Area would comply with the constraints of the energy minerals

protective leasing stipulation for cultural values. Locatable minerals activities would be regulated under the 43 CFR 3809 Surface Management Regulations to prevent unnecessary and undue degradation. There would be no significant impacts to mineral resources under this alternative.

f. Livestock Grazing

Motorized vehicles could be utilized as needed for livestock management. There would be no impacts to livestock grazing under this alternative.

## VII. RECOMMENDED ACTION

### A. Recommended Action Description

The recommended action for the Presilla WSA is the No Action/No Wilderness Alternative. The entire 8,680-acre WSA is recommended nonsuitable for wilderness designation.

### B. Rationale

The Presilla WSA is being recommended nonsuitable for wilderness designation because of the quality of the area's naturalness and wilderness manageability problems.

A major reason for recommending the Presilla WSA nonsuitable is the low quality of the area's naturalness. As discussed in Chapter V, Public Involvement Overview, the BLM released the entire Presilla area from further wilderness consideration at the conclusion of the intensive inventory. This decision was based on pre- and post-FLPMA impacts to the area's naturalness. The Interior Board of Land Appeals reversed this decision and remanded Presilla to the BLM as a WSA because "...impacts resulting from unauthorized activities will not disqualify an area from WSA status."

During the wilderness study, the quality of the area's naturalness was re-evaluated. Although the eastern and southwestern portions of the WSA appear natural, the central and northern portions have been cumulatively impacted by pre-FLPMA developments. Because of the location of these impacts, a boundary adjustment to improve the WSA's overall naturalness is impossible. Post-FLPMA impacts further reduce the area's apparent naturalness.

The second reason for recommending the WSA nonsuitable is the WSA's lack of manageability. Because of the WSA's low quality naturalness and poor potential for returning the area to a substantially natural state, the area could not be managed to provide wilderness values.

### C. Consistency With Other Plans

The recommended action for the Presilla WSA does not conflict with any decisions in the East Socorro Grazing Environmental Impact Statement (BLM 1979) or the Stallion Management Framework Plan (BLM 1975).

At this time, there are no known inconsistencies between the recommended action and the policies of local, state, or Federal plans. Continuing coordination and consultation with other agencies will take place during the public comment period on the Las Cruces District Wilderness Supplemental Draft Environmental Assessment.





## GLOSSARY

ADIT. A nearly horizontal entrance to a mine.

AGGREGATE. A mineral material such as sand, gravel, shells, or broken stone.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A documented program which applies to rangeland operations on public land, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: (1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for public land through land use planning; (2) describes the type, location, ownership, and general specifications for the rangeland developments to be installed and maintained on public land to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

ALLUVIAL. Pertaining to material that is transported and deposited by running water.

ALLUVIAL CONE. An alluvial fan with steep slopes.

ALLUVIUM. Material, including clay, silt, sand, gravel, or similar unconsolidated sediments, deposited by a stream or other body of running water.

ANDESITE. A volcanic rock composed essentially of andesine and one or more mafic constituents. The mafic constituents may be pyroxene, hornblende, or biotite.

ANIMAL-UNIT MONTH (AUM). The amount of forage required by an animal unit for one month.

ANTICLINE. An upfold of stratified rock in which the beds bend downward in opposite directions from the crest.

ARCHAIC. That period of human adaptation following the late Pleistocene Paleo-Indian people and prior to the development of sedentary agricultural groups in the Southwest.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ARKOSE. A sandstone containing 25 percent or more of feldspars, usually derived from silicic igneous rocks.

ASPECT SPECIES. A vegetative species that appears to be dominant in the landscape, although it may be only a small percent of the total vegetative composition.

AVIFAUNA. All birds of a given region.

BASALT. A dark to medium-dark colored, commonly extrusive, mafic igneous rock.

BASIN AND RANGE PHYSIOGRAPHIC PROVINCE. A province in the southwestern United States characterized by a series of tilted fault blocks forming longitudinal ridges or mountains and broad intervening basins.

BATHOLITH. A great mass of intruded igneous rock that extends downward to unknown depth.

BOLSON. A flat-floored desert valley that drains toward a playa or central depression.

BUREAU SENSITIVE. Fish, wildlife, and plants which are candidates for Federal listing or species proposed for Federal listing automatically become Bureau Sensitive species.

CALDERA. A large basin-shaped volcanic depression the diameter of which is much greater than the vent.

CALICHE. A layer in the soil more or less cemented by calcium carbonates ( $\text{CaCO}_3$ ), commonly found in arid and semiarid regions.

CARBONACEOUS. 1. Coaly. 2. Pertaining to, or composed largely of, carbon. 3. The carbonaceous sediments include original organic tissues and subsequently produced derivatives of which the composition is chemically organized.

CAULDRON. An inclusive term for all volcanic subsidence structures regardless of shape or size, depth of erosion, or connection with the surface.

CHERRY-STEMMED. An unofficial term used to describe the way a wilderness inventory unit boundary is drawn to exclude a road that enters the unit; the resulting boundary resembles a cherry-stem.

CLOSED BASIN. A basin is considered closed with respect to surface flow if its topography prevents the occurrence of visible outflow. It is closed hydrologically if neither surface nor underground outflow can occur.

CONFORMABLE. 1. Strata or groups of strata lying one above another in parallel order are said to be conformable. 2. When beds or strata lie upon one another in unbroken and parallel order, and this arrangement shows that no disturbance or denudation has taken place at the locality while their deposition was going on, they are said to be conformable.

CONGLOMERATES. Clastic sedimentary rock composed of rounded fragments varying from small pebbles to large boulders in a cement of calcareous material such as iron oxide, silica, or hardened clay.

CONTIGUOUS LANDS. As it pertains to wilderness, lands or legal subdivisions having a common boundary. Lands having only a common corner are not contiguous.

COPPICE DUNES. Sand dunes stabilized around shrubs.

CRITICAL MINERALS. Those minerals that are critical to the economy and security of the United States and for which we are now dependent on foreign sources. These minerals are listed in the National Defense Stockpile Inventory of Strategic and Critical Materials.

CUESTAS. A hill or ridge with a steep face on one side and a gentle slope on the other.

CULTURAL RESOURCE INVENTORY CLASSES.

Class I - Existing Data Inventory: an inventory study of a defined area designed to provide a narrative overview (cultural resource overview) derived from existing cultural resource information and to provide a compilation of existing cultural resource site record data on which to base the development of the BLM's site record system.

Class II - Sampling Field Inventory: a sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in a manner which will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area. The Class II inventory is a tool utilized in management and planning activities as an accurate predictor of cultural resources in the area of consideration. The primary area of consideration for the implementation of a Class II inventory is a planning unit. The secondary area is a specific project in which an intensive field inventory (Class III) is not practical or necessary.

Class III - Intensive Field Inventory: an intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area. Normally, upon completion of such inventories in an area, no further cultural resource inventory work is needed. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

DEFORMATION. Any change in the original form or volume of rock masses produced by tectonic forces. Folding, faulting, and solid flow are common modes of deformation.

DIKE. A tabular body of igneous rock that cuts across the structure of adjacent rocks or cuts massive rocks.

DIRT TANK. Usually a permanent earthen structure for holding water temporarily. These are built in high rainfall runoff areas such as an arroyo, canyon, or swale area.

DRAINAGE BASIN. A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

ECOSYSTEM. An interacting natural system including all the component organisms together with its nonliving environment; a community together with its environment; an ecological system.

ECOTONE. A transition area between plant communities which has some of the characteristics of each.

EMBAYMENT. Term describing a continental border area that has sagged concurrently with deposition so that an unusually thick section of sediment results. An embayment is similar to a basin of sedimentation of a geosyncline, and some embayments may be one flank of a larger subsiding feature.

ENDANGERED SPECIES.

Federally Listed: Any species of animal or plant in danger of extinction throughout all or a significant portion of its range.

State (Group I): Species whose prospect of survival or recruitment in the State are in jeopardy in the foreseeable future.

State (Group II): Species whose prospect of survival or recruitment within the State may become jeopardized in the foreseeable future.

EPHEMERAL STREAMS. A stream or portion of a stream which flows only in direct response to precipitation. Such flow is usually of short duration.

EROSION CONTROL STRUCTURES. Usually one large earthen, rock, wire, or cement structure used to hold large concentrated flows of water and release this water in small non-eroding amounts.

EXTENSION AREA. A test range in excess of that provided by the main White Sands Missile Range (WSMR) required for an indefinite period of time to support future military programs.

EXTRUSIVE ROCK. Rocks derived from magma poured out or ejected at the earth's surface.

FAULT. A fracture in the earth's crust along which there has been displacement of one side with respect to the other.

FAULT BLOCK. A block of the earth's crust bounded on at least two opposite sides by faults; it may be elevated or depressed relatively to the adjoining region.

FAULT SCARP. A cliff formed by a fault, usually modified by erosion unless the fault is very recent.



FISSURE. 1. An extensive crack, break, or fracture in the rocks. A mere joint or crack persisting only for a few inches or a few feet is not usually termed a fissure by geologists or miners, although in a strict physical sense, it is one. 2. Where there are well-defined boundaries, very slight evidence of ore within such boundaries is sufficient to prove the existence of a lode. Such boundaries constitute the sides of a fissure.

FLPMA. Federal Land Policy and Management Act of 1976, which mandated the BLM Wilderness Review. Often referred to and pronounced "FLIPMA".

FOLD, FLEXURE. A type of fold, in size microscopic to orogenic, in which movement took place normal to the axial line and parallel with the limbs, producing notable shortening.

FORMATION. The primary unit of formal mapping or description. Most formations possess certain distinctive or combinations of distinctive lithic features. Boundaries are not based on time criteria. Formations may be combined into groups or subdivided into members.

GANGUE. The nonvaluable minerals in ore.

GEOPHYSICAL EXPLORATION. The use of geophysical instruments and methods to determine subsurface conditions by analysis of such properties as specific gravity, electrical conductivity, or magnetic susceptibility. This usually has an economic objective, e.g. discovery of fuel or mineral deposits.

GEO THERMOMETRY. Measurement and study of the earth's heat, usually measured through shallow temperature gradient holes less than 500 feet.

GRABEN. A block generally long compared to its width that has been down thrown along faults relative to the rocks on either side.

GRANDFATHERED. Section 603(c) of the Federal Land Policy and Management Act (FLPMA) directs the BLM to manage lands under wilderness review "so as not to impair the suitability of such areas for preservation as wilderness....". However, Section 603(c) also provides a special exception to the "nonimpairment" criteria. Mining, grazing, and mineral leasing uses existing on the date of approval of FLPMA (October 21, 1976) may continue in the same manner and degree as on that date even if these uses impair wilderness values. Such uses are "grandfathered."

HALF-SHRUB. A perennial plant with a woody base whose annually produced stems die back each year.

HEAT FLOW. Dissipation of heat coming from within the earth by conduction or radiation at the surface.

HORST. A block of the earth's crust separated by faults from adjacent blocks that have been relatively depressed.

HYDROCARBONS. Any organic compound, gaseous liquid, or solid, consisting solely of carbon and hydrogen, such as crude oil.

HYDROTHERMAL. Relating to hot water in the formation of minerals by the action of hot solutions rising up through the earth's crust from a cooling magma.

IGNEOUS ROCKS. Rocks formed by solidification of magma.

INHOLDING. Private or State owned land inside the boundary of a wilderness study area but excluded from the wilderness study area.

INITIAL INVENTORY. The first step in the BLM Wilderness Review Process. Inventory units or roadless areas which are obviously unsuitable for wilderness are separated from those which warrant intensive inventory for wilderness characteristics.

INSTANT STUDY AREAS. Section 603 of the Federal Land Policy and Management Act mandated that all primitive or natural areas formally identified prior to November 1, 1975, will be studied for wilderness suitability and recommended to the President by July 1, 1980. There are three such areas in New Mexico.

INTENSIVE INVENTORY. The second major step in the BLM Wilderness Review Process. Roadless areas are carefully inventoried for wilderness characteristics. The result of the intensive inventory is the identification of wilderness study areas.

INTERIOR BOARD OF LAND APPEALS (IBLA). The IBLA, as a component of the Department of the Interior Office of Hearings and Appeals, is an authorized representative of the Secretary. The purpose of the IBLA is to hear, consider, and determine as fully and finally as might the Secretary, matters within the jurisdiction of the Department involving appeals from decisions rendered by Departmental officials relating to (1) the use and disposition of public lands and their resources and (2) the use and disposition of mineral resources in certain acquired lands of the United States. Special procedures for appeals are contained in 43 Code of Federal Regulations, Part 4, Subpart E.

INTERIOR FENCE. Fences used to divide allotments into pastures or holding areas.

INTRUSION. A feature (landform, vegetation, or structure) which is generally considered out of context because of excessive contrast and disharmony with characteristic landscape.

INTRUSIVE ROCK. A rock that consolidated from magma beneath the surface of the earth.

INVENTORY UNIT. Areas or islands of public land indexed for easy reference at the start of the wilderness inventory. These units may or may not be roadless. A roadless determination requires more detailed field work.

LIFE ZONES. Any series of biogeographic zones into which a continent, region, etc., is divided by latitude and altitude on the basis of the characteristic animal and plant life in a zone.

LITHIC. A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers, and chips rather than ground stone.

MAGMA. Naturally occurring mobile rock material generated within the earth and capable of intrusion and extrusion from which igneous rocks are thought to have been derived through solidification and related processes.

MAGNETIC PROSPECTING/GRAVITY SURVEYS. A technique of applied geophysics; a survey using a magnetometer or a gravity meter on the ground or from the air to measure variations in magnetic or gravitational intensity.

MALPAIS. Rough country composed of dark basaltic lava.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. A MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decisionmaking.

METAMORPHIC ROCKS. Rocks formed in the solid state in response to changes of temperature, pressure, and chemical environment.

METAMORPHISM. Process by which consolidated rocks are altered in composition, texture, or internal structure by conditions and forces not resulting simply from burial and the weight of subsequently accumulated overburden.

METAVOLCANICS. Partly metamorphosed volcanic rocks.

MINERALIZATION. The process of converting or being converted into a mineral, as a metal into an oxide, sulfide, etc.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

OVERSTORY. The upper canopy(s) of plants.

PALEOENVIRONMENTAL STUDIES. Studies using fossilized pollen and other geological and biological remains to determine past climatic conditions.

PALEO-INDIAN. Cultural remains of human groups which co-existed with Pleistocene megafauna in North America, dating from 15,000 B.C. to approximately 7000 B.C.

PARTHENOGENIC. Unisexual reproduction where offspring are produced from unfertilized eggs.

PEDIMENT. A broad gentle sloping bedrock surface that is situated at the foot of a much steeper mountain slope in an arid or semiarid region.

PERENNIAL STREAM. A stream or portion of a stream which flows continuously.

PERIPHERAL SPECIES. Species whose normal range is in adjoining states or Mexico and which are at the edge of their range in New Mexico.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PLACER. A place where gold is obtained by washing; an alluvial or glacial deposit, as of sand or gravel, containing particles of gold or other valuable minerals.

PLATFORM. The area of thinner sediments adjoining a geosynclinal wedge of thicker equivalent beds or a basin of thicker equivalent sediments.

PLAYA. The usually dry and nearly level lake plain that occupies the lowest part of a closed depression.

PLUGS. Volcanic necks consisting of a mass of solidified igneous rock.

PLUTON. In the strictest sense, a body of igneous rock that has formed beneath the surface of the earth by consolidation from magma.

PROSPECT HOLE. Any shift, pit, drift, drill hole, or ditch made for the purpose of prospecting the mineral-bearing ground.

PROVINCE. A large area or region unified in some way and considered as a whole.

PSEUDORIPARIAN AREAS. Intermittent drainages (arroyos) supporting a more varied vegetation composition than the surrounding upland areas.

PSILOMELANE. An ore of manganese.

PUBLIC LAND. Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- lands located on the Outer Continental Shelf
- lands held for the benefit of Indians, Aleuts, and Eskimos
- lands in which the United States retains the minerals, but surface is private.

PUMICE. An excessively cellular, glassy lava, generally composed of rhyolite.

PYROLUSITE. The principal ore of manganese.

PYROXENE. A group of dark, rock-forming silicate minerals.



RANGE SITE. Is a distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differs from that of other range sites in the kind or proportion of species or in total production.

RANGELAND DEVELOPMENT. Any facility or structure relating to rangelands which is designed to control patterns of use, provide water, and stabilize soil and water conditions.

RAPTOR. Any predatory bird such as a falcon, hawk, eagle, or owl that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

RARE II. The wilderness inventory on lands administered by the Secretary of Agriculture through the United States Forest Service. The acronym stands for Roadless Area Review and Evaluation, and the "II" signifies that it is the second time the Forest Service has inventoried and evaluated the lands it administers.

RED BEDS. Term applied to red sedimentary rocks which usually are sandstones and shales, although in exceptional cases red limestones have been reported.

RHYOLITE. The extrusive equivalent of granite.

RIFT. A rift or rift zone usually refers to a system of fractures (faults) in the earth's crust and the associated valley or depression.

RIGHT-OF-WAY. An easement or permit which authorizes public land to be used for a specified purpose that generally requires a long narrow strip of land. Examples are roads, powerlines, pipelines, etc.

RIPARIAN VEGETATION. Vegetation which occurs in or adjacent to essentially perennial drainage ways or their floodplains.

ROAD. For the purpose of the BLM's wilderness inventory, the following definition has been adopted from the legislative history of the Federal Land Policy and Management Act:

"The word 'roadless' refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A trail maintained solely by the passage of vehicles does not constitute a road."

To clarify this definition, the following subdefinitions also apply:

"Improved and maintained" - Actions taken physically by man to keep a road open to vehicular traffic. "Improved" does not necessarily mean formal construction. "Maintained" does not necessarily mean annual maintenance.

"Mechanical means" - Use of hand or power machinery or tools.

"Relatively regular and continuous use" - Vehicular use which has occurred and will continue to occur on a relatively regular basis. Examples are: access roads for equipment to maintain a stock water tank or other established water sources, access roads to maintained recreation sites or facilities, or access roads to mining claims.

ROADLESS. Refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A trail maintained solely by the passage of vehicles does not constitute a road.

ROADLESS AREA. That area which is roadless, as defined above, and is bounded by a road, the edge of a right-of-way, other land ownership, or a significant imprint of man.

SEDIMENTARY ROCKS. Rocks formed by the accumulation of sediment.

SHEAR ZONE. A geologic zone in which shearing has occurred on a large scale so that the rock is crushed and brecciated.

SILICEOUS. Of or pertaining to silica; containing silica, or partaking of its nature. Containing abundant quartz.

SILL. A tabular igneous intrusion that parallels the planar structure of the surrounding rock.

SPECIAL CONCERN ELEMENT. Plant species considered rare or endangered by the New Mexico State Heritage Program, but not legislatively protected.

SPLIT ESTATE. Refers to the situation where the subsurface mineral estate is owned or controlled by a party other than the owner of the surface of the same land area.

SOLITUDE. Outstanding opportunities for solitude or primitive and unconfined recreation are wilderness characteristics examined in the intensive wilderness inventory. Factors contributing to opportunities for solitude are vegetative screening, topographic relief, vistas, and physiographic variety. 1. The state of being alone or remote from habitations; isolation. 2. A lonely, unfrequented, or secluded place.

STANDARD HABITAT SITE. A grouping of habitat sites based on similarity of vegetation and local landform.

STANDARD METROPOLITAN STATISTICAL AREA (SMSA). A metropolitan area that has a large population nucleus together with adjacent communities which have a high degree of economic and social integration with that nucleus. Each SMSA has one or more central counties containing the area's main population concentration; an urbanized area with at least 50,000 inhabitants.

STEPPE. Arid land usually characterized as being level and without forests; usually in large tracts and in regions of extreme temperature range and loose soil.

STORAGE TANK. A permanent water holding structure used to supply water to troughs, pipelines, etc.

STRATIFORM. Composed of layers.

STRINGER. A narrow vein or irregular filament of mineral occurring in a rock.

SULFIDE. A compound of sulfur with one other more positive element or radical.

SUPERGENE. Applied to ores or ore minerals that have been formed by generally descending water. Ores or minerals formed by downward enrichment.

SUPPLEMENTAL VALUES. Features of ecological, geological, or other scientific, educational, scenic, or historical value that may be present in an inventory unit. These are not necessary criteria for wilderness suitability, as is stated in the Wilderness Act of 1964, but must be assessed during the intensive wilderness inventory.

SUSTAINED YIELD. Management of a biological resource (as timber) such that the portion removed by one harvest is replaced by growth or reproduction before another harvest occurs.

SYENITE. An igneous rock composed primarily of alkali feldspar together with other minerals, such as hornblende.

SYNCLINE. A trough of stratified rock in which the beds dip toward each other from either side.

TECTONIC. Relating to the deformation of the earth's crust.

THREATENED SPECIES. Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.

TRAVERTINE. Calcium carbonate deposits commonly associated with hot springs.

TROUGH. An elongate and wide depression with gently sloping borders.

TUFF. A compacted deposit of volcanic ash and dust that may contain sand and clay.

UNALLOTTED FEDERAL LAND. Federal land which currently is not committed to livestock grazing use.

UNCONFORMABLE. Having the relation of unconformity to the underlying rocks; not succeeding the underlying strata in immediate order of age and in parallel position.

UNDERSTORY. The plants growing beneath the canopy of other plants.

UPLIFT. Elevation of any extensive part of the earth's surface relative to some other parts.

VEHICLE TRAIL. A two-wheel track created only by the passage of vehicles. A trail is not a road.

VEIN. A tubular body, long in two dimensions and short in the third. An occurrence of ore minerals, usually disseminated throughout gangue, or veinstone.

VESICULAR BASALT. Basalt with abundant vesicles formed as a result of the expansion of gases during the fluid stage of lava.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES. VRM Classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objectives for each class.

Class I - Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II - Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III - Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV - Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

WATER SPREADER. Usually several small, earthen, rock structures used to slow the water flow and give the runoff a chance to be absorbed by the soils and plants.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.



WILDERNESS AREA. An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDERNESS INVENTORY. An evaluation of the public land in the form of a written description and a map showing those lands that meet the wilderness criteria as established under Section 603(a) of the Federal Land Policy and Management Act and Section 2(c) of the Wilderness Act. The lands meeting the criteria will be referred to as Wilderness Study Areas (WSAs). Those lands identified as not meeting wilderness criteria will be released from further wilderness consideration.

WILDERNESS REVIEW. The term used to cover the entire wilderness inventory, study, and reporting phases of the wilderness program of the BLM.

WILDERNESS STUDY. The process of analyzing and planning wilderness preservation opportunities along with other resource opportunities within the BLM's planning system.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from some or all of the public land or mineral laws.

ZEOLITES. A large group of minerals that are characterized by their easy and reversible loss of water. They are used in the base exchange method of water softening and as gas absorbents or drying agents (filters).



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